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OCTOBER 11—NOVEMBER 8, 1985

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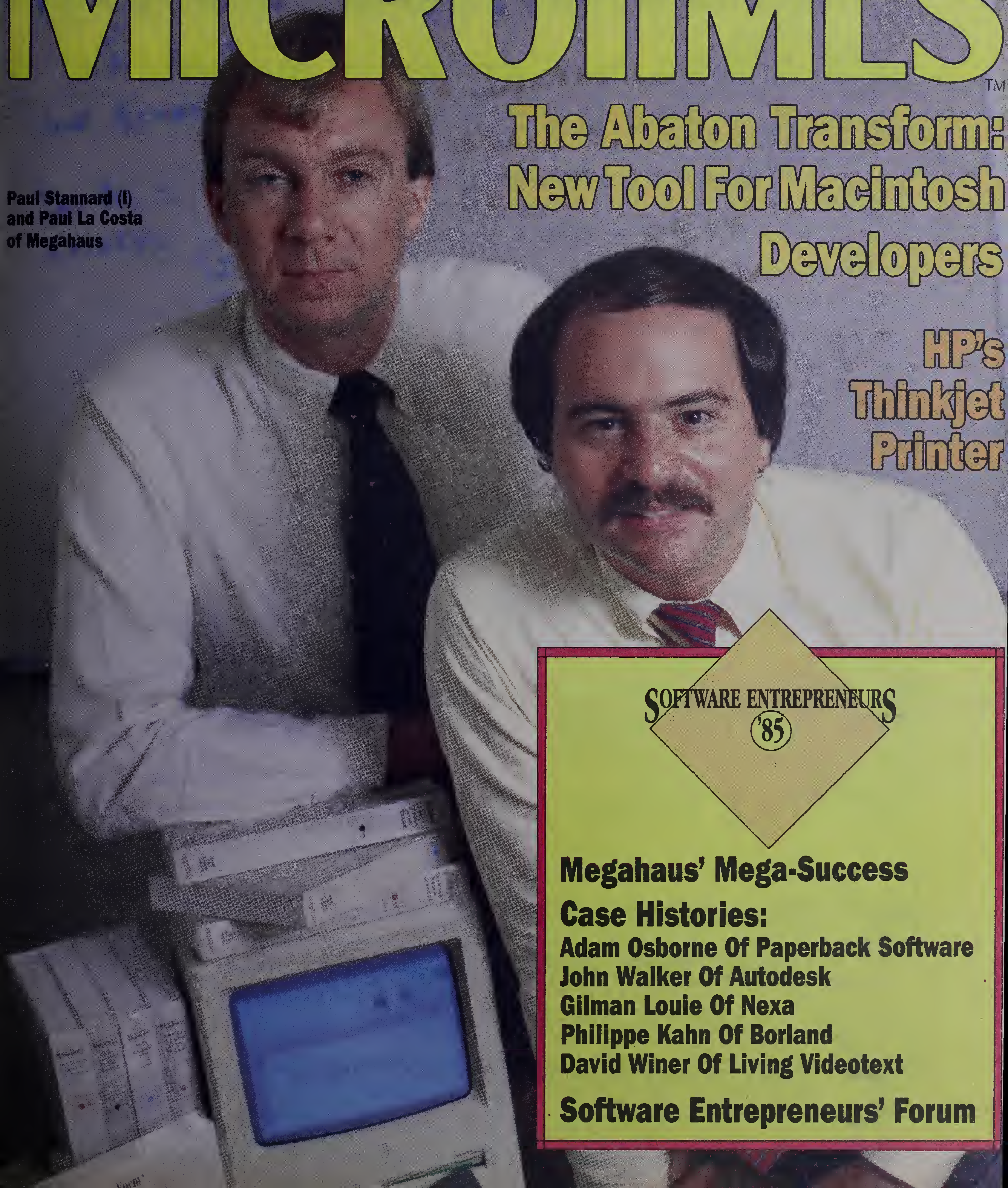

Paul Stannard (l) and Paul La Costa of Megahaus

The Abaton Transform: New Tool For Macintosh Developers

HP's Thinkjet Printer

SOFTWARE ENTREPRENEURS '85

Megahaus' Mega-Success

Case Histories:

- Adam Osborne Of Paperback Software
- John Walker Of Autodesk
- Gilman Louie Of Nexa
- Philippe Kahn Of Borland
- David Winer Of Living Videotext

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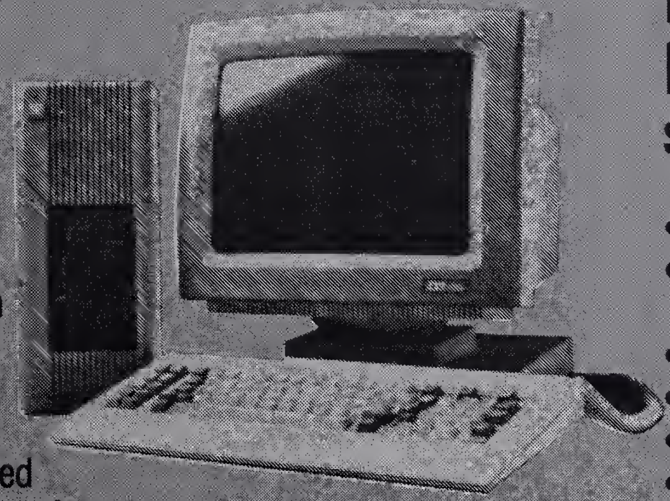

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FEATURES

Photo: Dave Lepori

The young founders of Hippopotamus Software successfully combine fun and quality products. See page 58.

58 Hippopotamus Software: Fun And Profit

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These youthful Silicon Valley entrepreneurs prove that good software doesn't have to be grimly serious.

62 HP's ThinkJet Printer: A Great Leap Forward?

By Mike Markowitz
This inexpensive printer's revolutionary design may make it the only printer you'll ever need.

64 How To Choose The Right Printer

By Seth Novogrodsky
An overview of the different types of printer currently available, with advice on determining the right one for your needs and making it work smoothly.

Photo: Pat Johnson Studios

You may be able to perform some of those expensive computer repairs yourself. See page 68.

68 Do-It-Yourself Computer Repair

By Tim Tyler
The Cascio School of Computer Technology fights the high cost of computer repairs by teaching users to perform most of these tasks themselves.

70 Abaton Technology: Shortcuts To Broaden The Mac's Software Base

By Mary Eisenhart
This Santa Monica company's new products, the Abaton Transform and Drive 5.25, greatly increase the amount of software available to Macintosh users.

72 Serious Mac Exploration With MacNosy

By Mary Eisenhart
Software that allows developers to explore the inner workings of Macintosh and gives them access to source code.

SOFTWARE ENTREPRENEURS '85

Photo: K. Gypsy Zaboroskie

Photo: Pat Johnson Studios

Photo: K. Gypsy Zaboroskie

Photo: K. Gypsy Zaboroskie

Software entrepreneurs (top to bottom) Adam Osborne, John Walker, Gilman Louie, Philippe Kahn, David Winer. See page 40.

30 Megahaus: *Small Company, Mega-Success*

By John D. Gresham
Megahaus is a small San Diego-based software company experiencing record-breaking sales. Co-founder Paul LaCosta explains how they did it.

Paul Stannard (l) and Paul LaCosta, of Megahaus, San Diego's tiny but successful software company. See page 30.

Cover and contents photos: Ann Summa

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In these excerpts from presentations at the 3rd Personal Computer Faire and the Software Entrepreneurs' Forum, founders of software companies relate their past adventures, dispense candid advice, and provide behind-the-scenes insight as to what it takes to succeed.

54 The Software Entrepreneurs' Forum

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This Bay Area organization was formed to pool resources among software developers; it serves as an invaluable resource in helping entrepreneurs choose their best strategy. Michael Wiesenberg reports on the organization's history, current activities and future plans.

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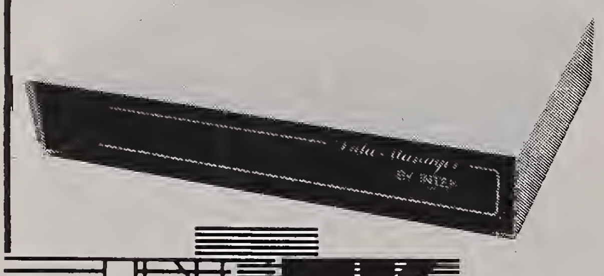

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CONTRIBUTING WRITERS Jina Bacarr, Matthew Berry, Gordon Bruce, Bruce Cannelongo, Joe Celko, Larry Clark, Randy Dennis, Robin J. Dunitz, Jack Epstein, James Evans, Bennett Falk, Laurie Foster, Steve Foster, Carter George, Ken Goehner, Lion Goodman, Walter Grams, Dave Johnson, Rose Johnson, Benjamin Krepack, Michael Murphy, Doug Pencille, Pamela Pescara, Vanessa Schnatmeier, Ed Shurtleff, Karen M. Sullivan, Tim Tyler, Michael Wiesenberg

CONTRIBUTING PHOTOGRAPHERS Pat Johnson, Robert Matheu, Richard McCaffrey, Ann Summa, K. Gypsy Zaboroskie

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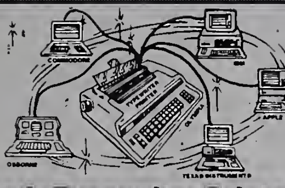

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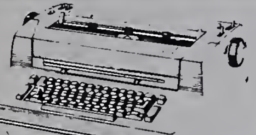

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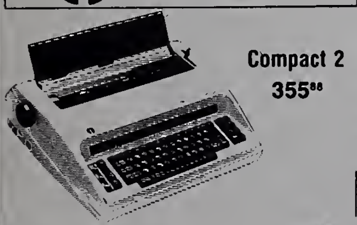

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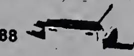

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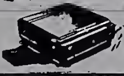

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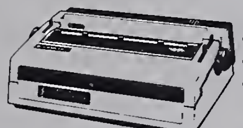

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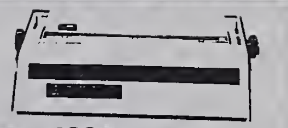

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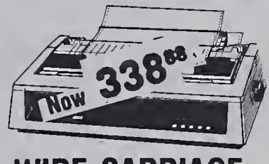

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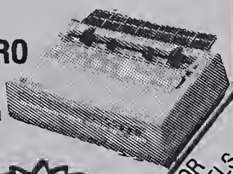

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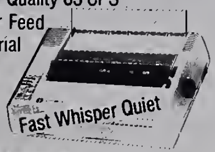

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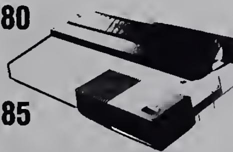

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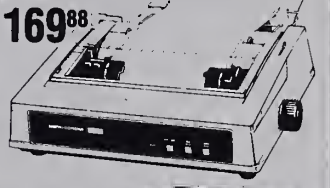

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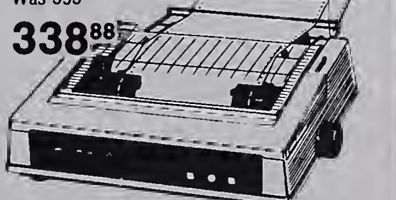

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Mac Challenger Challenged

[The following letter was sent to both **MicroTimes** and Aegis Development, Inc. Aegis' reply follows. We reprint both to provide information to consumers who may be in a similar situation.]

I am a recent purchaser of the *Mac Chall*enger software sold by Aegis Development. I bought this program on the basis of a review in the July 15th issue of **MicroTimes** in which Ken Goehner described a number of features not present on the disk I received. I am not referring to the features promised for later versions (satellite launchings, recoveries, EVA's etc.), but rather to the radar scan and the replay controls described in the review as already existing on the *Mac Chall*enger disk.

I feel that **MicroTimes** and/or Aegis have cheated me out of my money, since I have not received the product available to the reviewer and was not informed of the difference. **MicroTimes** should have included a version number in the review and Aegis should have made such information available to prospective buyers.

I would appreciate hearing from both **MicroTimes** and Aegis concerning this ripoff.

Howard Benjamin
Berkeley

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After some investigation, it was discovered that the purchaser had bought an early version of the program through an unauthorized mail order house. If he had mailed in his registration card, he would have been notified of the new version and manual.

Aegis Responds

Aegis Development, Inc., is very concerned with the current feelings in the software industry that software publishers are not interested in computer consumers or their rights. Although there are always exceptions to the rule, most publishers are in business to support the industry and the consumer. Aegis is no different.

Recently, a purchaser of an Aegis product discovered a version of *Mac Chall*enger that did not contain the features or operations as described in a review published in the July 15th issue of **MicroTimes.** The review described the final release, version 2 of *Mac Chall*enger. An earlier version of the software had been available for a limited time to several markets around the country.

The purchaser made no attempt to contact Aegis or any of its representatives to determine if in fact there had been an upgrade to the software. Instead, he wrote a series of blasting letters to a variety of industry journalists and to Aegis Development, condemning "rip-off" software publishers.

After some investigation, it was discovered that the purchaser had bought an early version of the program through an unauthorized mail order house. If he had mailed in his registration card, he would have been notified of the new version and manual. If he had dialed the Aegis phone number printed on the package, he would have been instructed on how to receive a free update. As it was, he received the updated disk and user guide with our thanks and apologies once we received his letter.

The software industry is rife with rumors about software and advertising for software that either does not include described features, or doesn't exist. That is not good business. As a result, I cannot blame the individual for feeling cheated about buying something other than what he had in mind. However, I am concerned with his tactics in getting the problem solved. They were not very fair.

Although products are normally advertised prior to their release, manufacturers have a responsibility to advertise the features and contents of the software they sell as accurately as possible. Purchasers have an equal responsibility to take actions that solve their problems, not glorify them.

Aegis Development, Inc., has been shipping *Mac Chall*enger version 2 since June 1, 1985. Prior to that date, version 1.0 of the software was available for a limited time. All Aegis Development authorized distributors and dealers were notified of the new version when it became available. Owners of *Mac Chall*enger who send in their registration cards are updated free of charge.

As any serious computer user knows, updates and revisions to software are normal procedure in this industry. That is one of the main reasons registration cards are provided in most quality products. There are certainly some manufacturers who seem to "disown" their end users once the product is out the door. However, Aegis is totally committed to truth in advertising and to quality computer products.

David Barrett
President, Chief Executive Officer
Aegis Development, Inc.
Santa Monica

CP/M, Please . . .

I'd like to express my appreciation for your services and many informative and interesting articles over the past months on CP/M, CP/M applications such as *WordStar* and *dBaseII*, and public domain programs for CP/M.

Woody McPheeters
Berkeley

Fan Mail

Thanks in part to your story about our *MacMegabytes* product [July 15] and our company, I have been so busy filling demand that I have not been able to write you and say "Thanks" for the kind words.

Needless to say, our product has been booming, and so many people have told us that they saw us on the cover of your magazine.

Stephen Beck
President, Beck-Tech
Berkeley

I just wanted to thank you for your efforts in getting the *Time Line 2.0* review [August 15] completed and printed in such a short period of time. It is actually the first 2.0 review to appear in print! (You beat out *InfoWorld* by three weeks!)

Thanks from everyone at Breakthrough.

Patricia S. Lucas
Communications Manager
Breakthrough Software
Novato

If the computer business is on the skids, I'd never know it. I finally have a moment to say thank you for the write-up you gave Spectre Technologies in your July 15th edition [Buyers Guide]. The boys from Spectre and I appreciate the space, particularly since we're still getting inquiries from as far away as Hawaii.

Ron Gold,
Ron Gold, n.a.
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Letters are heartily encouraged. Please send them to Letters, MicroTimes, 5951 Canning St., Oakland, CA 94609. Please sign your real name and include the town where you live.

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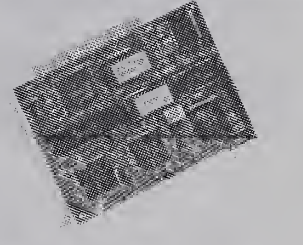

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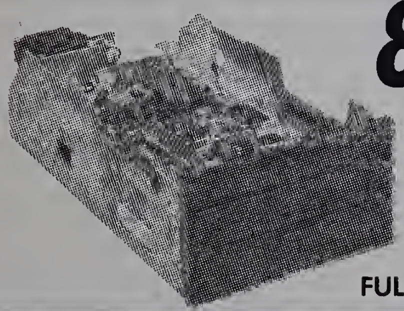

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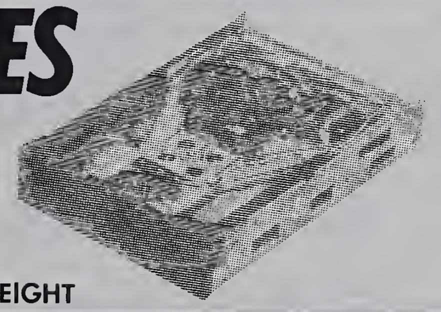

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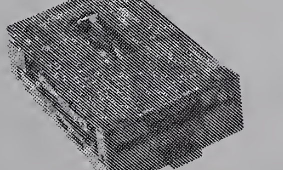

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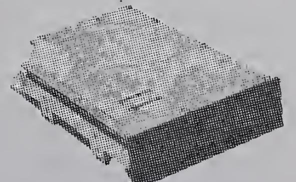

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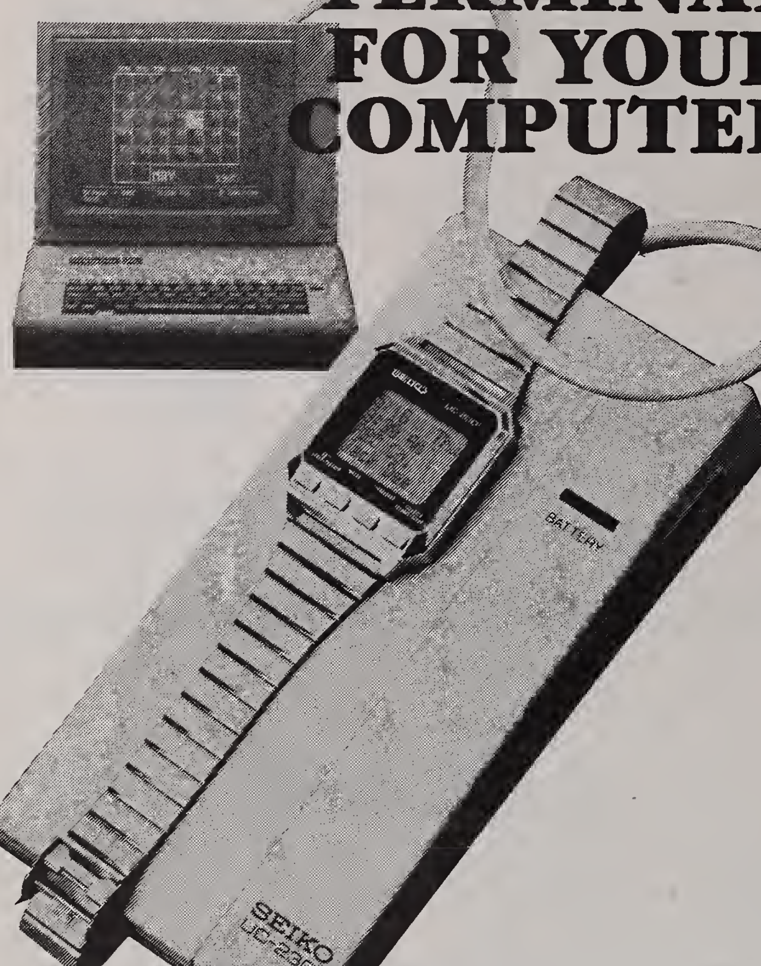

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Laser Disks, Or, Prepare To Trash Your File Cabinets

By Don Hamilton

Are you paying 50 cents per square foot for office space just to store your company files? Much of the space in any office is taken up with cabinets and shelves, not to mention boxes and other storage devices. Individual offices are the worst, because there is often only one person who can retrieve a file from a personnel system — the person who filed it. The same individual will store more information than he/she can typically maintain or find.

Remember Captain Kangaroo and his bottomless pockets? He could pull more tricks and junk out of those pockets than you or I would ever need. I used to wish I had pockets like that where I could store anything I might ever need. Wishes have a way of coming true when it comes to computer technology. In this case, the laser disk is the latter-day counterpart to the Captain's pockets. This little disk is beginning to consume most of the space at many record stores, which means that its price and technology are making its benefits available to the common man. Plans already exist to introduce laser disk systems to many of the personal computers available today.

So what does a laser disk have to do with computers? For one thing, it can hold 500 megabytes (or about 225,000 pages of text). How about the *Encyclopedia Britannica*? How about all the court cases in California this year? These are just some of the things that could be stored on one laser disk.

Another less obvious advantage is that laser disks are less costly storage devices than the equivalent paper storage files. The rental on the space they occupy is much cheaper. The average company uses at least 20% of its available space for storage of personal and company records. A company occupying 20,000 square feet would use approximately 4000 square feet for storage. At 50 cents per square foot, that company could spend $2000.00 per month for storage alone! 20,000 square feet represents a small company of about 100 to 150 employees, so a medium to large-sized company occupying 500,000+ square feet would increase its expenditure for storage accordingly. The overall cost saving on space and file cabinetry is one of the less obvious advantages of laser disk storage.

Floppies and hard disks are currently holding vast amounts of company records and are being used for more applications every day. Mainframe computers and their associated mass storage systems hold inventories, financial records, and other major data base systems.

Individual records such as letters, reports, and all the other paper generated for our dependent society are stored in file cabinets or on personal computers. This is the area that the will be impacted most by the laser disk. You could actually put the entire *Encyclopedia Britannica* in your pocket and forget you were even carrying it on a laser disk.

Here's a small, but important tidbit. A laser disk is hardened against nuclear attack. Just in case a nuclear bomb is detonated in your state, your laser disk will not lose any of its stored data. The computer may be dead, but your data will be alive and well.

I can imagine several places that the government would be able to take full advantage of mass storage and easy retrieval. The free information available from the Library of Congress would be a good place to utilize this system. Every subject the government has ever studied is theoretically available, but much of this information is not accessible because of the difficulty of retrieval. If a fraction of the information available on a subject pertaining to your business area were available on laser disk, you would not have to reinvent the wheel.

One of the results of all this is the increased need for documentation. As the capability of most user organizations increases, so will the requirements. Contracts require more transfer of information than they did five years ago, and that need will increase in the future. The companies that are ready to deal with this information revolution, and those which have already enhanced their data storage capabilities, will win the contracts. Others will be left behind, still clutching their old file cabinets.

Due to the built-in resistance of larger organizations to change, transition will not be made suddenly, even though the need for it is obvious even to the most casual observer. Change has to be planned and implemented over a long period of time, and the wise business will start now. ☐

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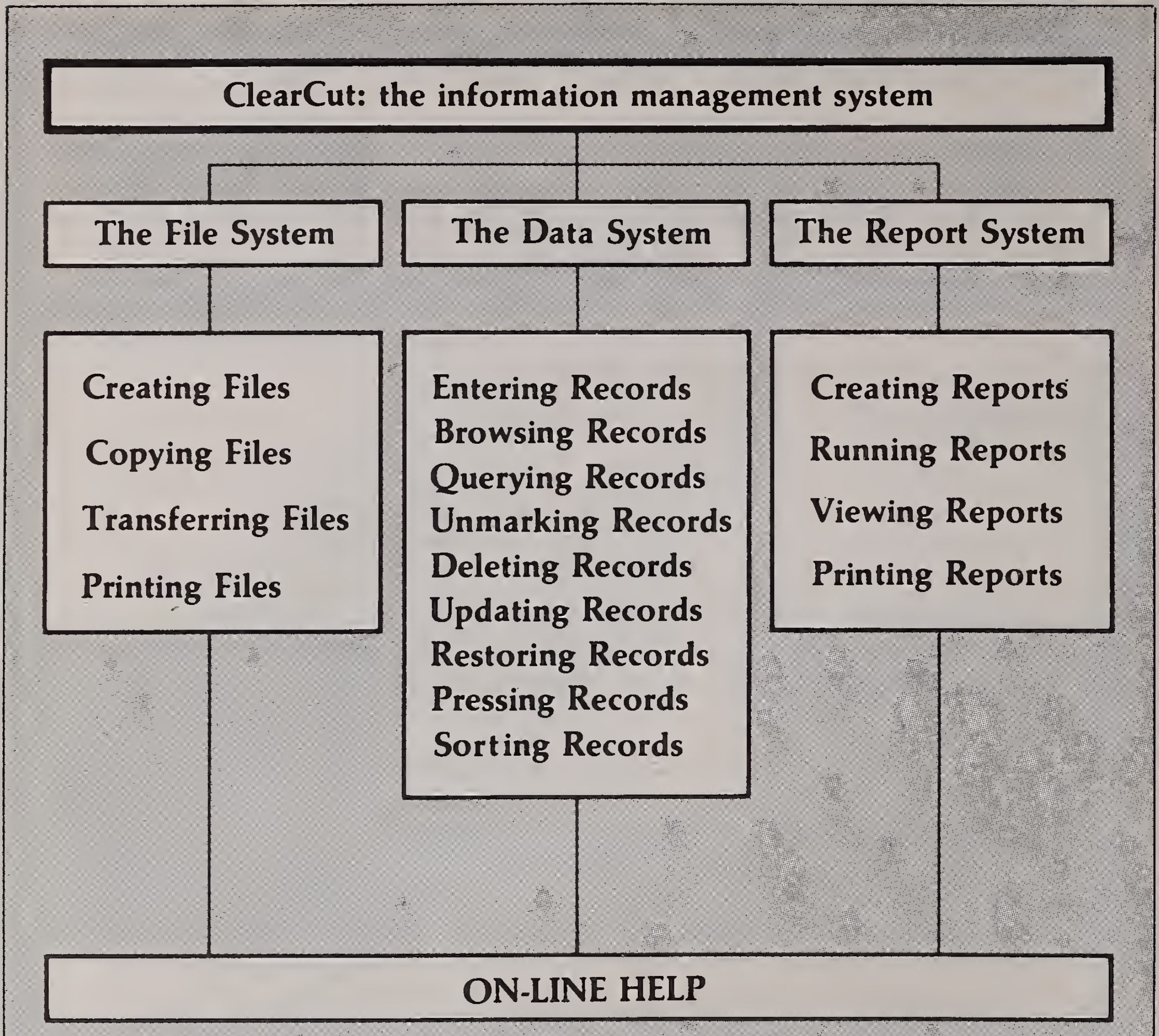

Clearcut from Menlosoft is an inexpensive, easy-to-use data base manager.

DATA BASE MANAGERS

Clearcut

Published by: *Menlosoft*
For: *IBM PC and compatibles, NEC APC III*
Price: *$49*
Reviewed by: *Bennett Falk*

Clearcut is a form-based information management tool for the IBM PC and the NEC APC III that is inexpensive, easy to use, and well documented. Though it is a relatively small program, it is entirely self-contained. It does not require much in system resources (128K RAM, DOS 2.0 or higher, at least 1 floppy disk drive), yet it achieves truly impressive results.

Clearcut consists of three modules (a "file" manager, a "data" manager, and a "report" manager) held together by a sleek menu interface. "File" management is basically form design and some housekeeping functions. Using a menu-driven full-screen editor, you can create elaborate forms for entering and querying data. *Clearcut* gives you complete control over the screen and its video attributes with "paint" and "draft" commands. Data fields may be defined simply by being marked on a form. When you are finished drawing the form, it is ready for use immediately: simply save it, exit the file manager, and start the data manger.

The "data" manager can be used to enter, query, sort, delete, or update records. Driven by the data management module of *Clearcut*, the form becomes a kind of window on your data showing you one record at a time with a status line showing the number of records in the data file, the number of the currently displayed record, and the number of records satisfying recent queries. If repetitious data must be entered, a "recall" function is available to display the most recent record entered on a blank form. There are also special keys to write the date or time to the current field.

The "report" manager is used to create a more complicated ordering of data than can be achieved just by querying and sorting the records in the database. First a report "form" must be created, and then fields in that form may be linked to the fields in a data entry form. Report design includes the same video attribute control that is available in this file manager. It also includes special formatting features to sort data into groups or aggregates and to allow calculation of totals, averages, counts, minimums and maximums for each group identified. Once a report has been designed, the report manager will allow you to run the report for your current data with output being sent to your choice of file, screen, or printer.

Clearcut is a very useful program with no apparent bugs, and it has two natural audiences. Its ease of use and modest price should appeal to users who are encountering the mysteries of database management for the first time. Its outstanding form-design capabilities should appeal to more experienced users needing a sound data entry tool that can be used to collect data and pass it on to other programs for processing. (*Clearcut* includes a "supplemental program" that will load data from and unload data to ASCII files.)

Of course *Clearcut* has its limits. It would be helpful to see more than one record at a time on the screen when browsing through data. Forms may have a maximum of six screens. *Clearcut* has no provision for disciplining what gets entered into a field. The "data types" *Clearcut* recognizes are very general: some more specialized types of fields (a "date" type, for example) would be very desirable. Editing an existing form can be tricky: you should create a new form similar to the old one and use the "transfer" command to import the data. Identifying the results of queries by "marking" the records can be awkward: unless some action is taken to "unmark" records, the results of queries simply accumulate. The report manager would be more useful if it allowed more than one level of grouping.

Clearcut illustrates one crucial truth about computers and data: the computer you work with will determine how you think about your data. Indeed, to a large extent, the nature of your computer will define what counts as data and what counts as database management. If your machine has an abundance of disk space, database management will be primarily file management. If large amounts of memory and a fast processor are at your fingertips, then database management will be mostly number crunching and sorting. Finally, if your machine has the resources to display your data artfully, database management will be a matter of presentation.

Clearcut falls into this last category. It is a product that encourages you to think about how your data should look both on the screen and on paper. *Clearcut* supports this emphasis on presentation with enough solid "data manipulation" capabilities that it should prove to be a very durable product.

TELECOMMUNICATIONS

CompuTelex

Published by: *MicroComputer Trends*
For: *IBM PC and compatibles*
Price: *$149.00*
Reviewed by: *Joseph C. Fusco*

Organizations looking for a user-friendly software package to help send and receive telex messages with PCs will find an important piece of this communications puzzle in *CompuTelex*.

The telex network has been widely recognized for its ability to move small messages great distances within hours — but there are problems. What if the sender or the receiver doesn't have a telex machine? What if they do but aren't near it? *CompuTelex* provides alternatives to these problems with a link between word processing and global communications.

First, it greatly streamlines the communication process. Most communications software can already access the telex system, but typical users, clericals and non-computer professionals, are not likely to understand communications software. Communications programs, like *Crosstalk* and *Mite*, offer a wealth of options, few of which mean anything to, say, a sales manager who has to get a new price list out to the field. With *CompuTelex*, initiating the communications process requires only the essentials of baud rate, send/receive mode, and a handful of other options, few of which are ever reset once *CompuTelex* is initialized.

After the straightforward initialization process, users are met with easily understood menus and one-button operation to send or receive messages. In fact, *CompuTelex* makes message transmission easier with a PC than with a telex machine.

Another important convenience is the program's directory. Here addresses of frequently telexed locations can be saved, eliminating the search for telex numbers and answerbacks that never seem to be around when you need them. Names in the directory can even be sorted (though not subgrouped.)

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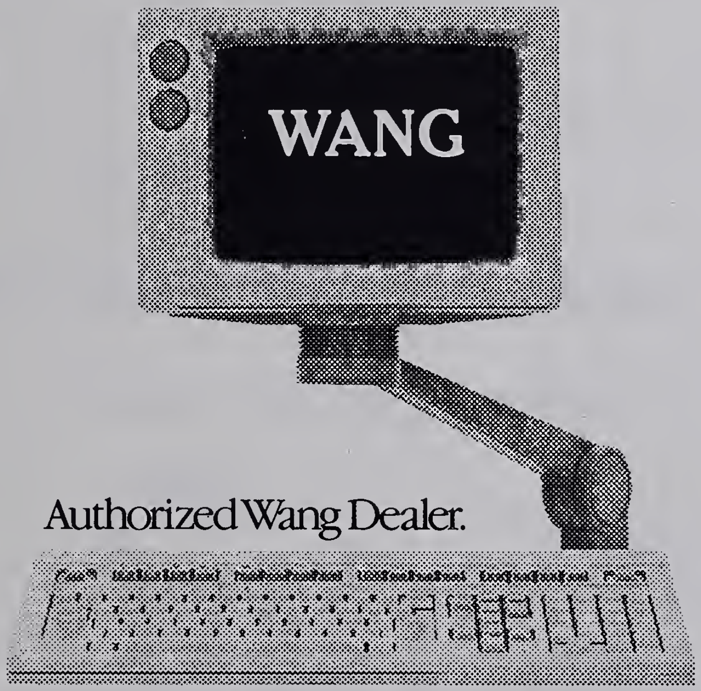

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TELECOMMUNICATIONS

CompuTelex also has its own editor. A last minute change, for instance, can be made in *CompuTelex* instead of returning to the word processor or reentering the entire message. Long messages are usually composed on a word processor, then converted by *CompuTelex* to ASCII for transmission. Short messages can be composed entirely in the *CompuTelex* editor itself.

A file manager for disk access, displaying files, printing messages, changing file names, and deleting files is the last major feature. This is important because telex messages, after time, will create hundreds, if not thousands, of files to be managed. By combining file management, communications capability, a directory and an editor, all of the important message management features are controlled by this one program.

There are some issues, beyond the scope of a *CompuTelex*-type program, that must be considered. But first the program's most serious concern, its $149 price tag, must be explained.

To some this may not be a problem. After all, the telex line and terminal that *CompuTelex* will replace cost about $140 per month! Yet compared to *Sidekick*, a popular $40 program which can access the telex network (though with less ease), *CompuTelex* is pricey for a single-function package. *Sidekick* has established a new, lower price ceiling for the entire class of "convenience" programs. However, there are quantity discounts available for the *CompuTelex*, which is better suited to organizations than individual PC users (who rarely send telex messages anyway).

CompuTelex makes sending a telex via PC as easy as using a telex terminal, but with a great deal more flexibility.

Copy protection is another issue that *CompuTelex's* publisher might have to rethink. Also, at present the publisher, Micro Computer Trends, offers a ten-day money back guarantee on the product, but this may be of limited value to telex senders who travel or are in remote locations.

Someone who is familiar with micros, word processing and telecommunications, may even find *CompuTelex* too limited. Much of what it does can be handled by communications programs and existing applications packages, if the user knows what he or she is doing. Again, however, this does not describe typical telex users. In an organization where several people have to send and receive messages, simplicity in doing so is the order of the day. Multiple users and complicated instructions never mix in the message business.

Another important feature of *CompuTelex* is its user's guide. It is well organized, clearly written, and nicely presented on the page, almost a model of what user-friendly documentation should be. It could use an index and more configuration information, but when it describes the essentials of sending a message, it couldn't be better. Its descriptions are function-oriented rather than option-oriented. Instead of reading that field "A" does this and parameter "B" does that, there are easily understood "how to" descriptions: how to send a message to a single location with answerback verification, how to send the same message to multiple

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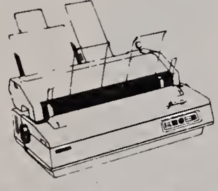

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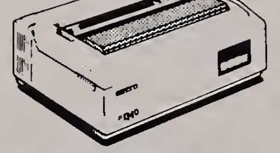

- Letter quality and draft speeds
- Qume Sprint 5 emulation
- Superb graphics at 180 × 180 dots per inch

In Touch with Tomorrow
TOSHIBA

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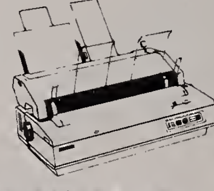

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- Superb graphics at 360 × 180 and 180 × 180 dots per inch

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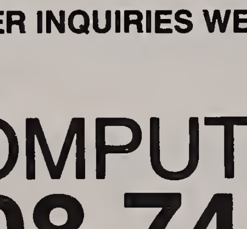

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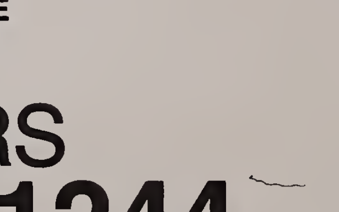

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TELECOMMUNICATIONS

locations using different formats, how to send a telex with automatic cable conversion, and so forth. Examples accompany each explanation.

Some telex applications are real time, but most are "store and forward," where messages are held in the telex networks' computers until they can be received. *CompuTelex* functions in both cases, using RCA Telextra for real time, and ITT TimeTran, RCA Telextra or Western Union Easylink for store and forward.

However, ITT, RCA and Western Union aren't the only message services available. Not only are there other telex, cable and telegram carriers, there are the electronic mail carriers to consider: MCI Mail, GE Telemail, and, though well-known but now defunct, the postal service's E-COM. If sender "A" uses Western Union, but receiver "B" uses MCI, *CompuTelex* can do little more than format the message and send it half way. To solve this problem, users of this (or any) message system will want to turn to network bridging services like International Electronic Mail Services in Cupertino, CA. These network bridging services provide one-stop shopping for telex and e-mail. They unite various systems and computers, making it possible to send any message, any place, through almost any combination of computers and terminals. In brief, *CompuTelex* can be expected to perform no better than the network services behind it.

CompuTelex makes sending a telex via PC as easy as using a telex terminal, but with a great deal more flexibility. Single users can take advantage of what the program offers, but a more important application is in organizations with squadrons of PCs, telex machines and people scattered about. Looking to the future, when portable PCs and cellular telephones gain greater acceptance, programs like *CompuTelex* will probably become a very popular application.

Micro Computer Trends is located at 8421 Wilshire Blvd., Suite 202, Beverly Hills, CA 90211, 213-653-4331, Telex 288890.

UTILITIES

UNIFORM 3.01

Published by: *MicroSolutions*
For: *CP/M*
Price: *$69.95*
Reviewed by: *Robert D. Athey Jr.*

One of the more frustrating problems with buying a computer is that each machine is limited to a particular type of software. Whether by accident or design, the computer industry avoids standard disk sizes and formats, perhaps to ensure software sales for the company that developed the software. We are therefore subjected to the bewildering variety of 8", 5¼" and 3½" disks, floppy and semi-floppy, double side and single side, double density and single density. This array will get even larger soon, as the magnetic fields used to impress data on a disk will soon be non-standard.

Even if you have the same single-side double-density disks as your neighbor, you can't swap files, games or whatever! Each type of computer formats disks differently, too. Computer designers have a blank disk to start with, as the magnetic coating is continuous throughout the surface covered. They build into their package of control software a set of instructions that places a selection of tracks and sectors, the reference areas they need to locate the data that will eventually be recorded on the disk. The choices—sizes and locations of the tracks and sectors, such as the width of the magnetic record strip—are strictly arbitrary, and determined by expendiency and the design engineer's requirements. The net result is that formats are unique to the computer, which limits you to software trades with those people that have the same computer you have. If you're in a large user group, that's not a serious limitation. However, one editor I deal with has an IBM PC, while I have a CP/M computer. It would certainly be easier on both of us if I could send her an ASCII file on a disk for her to edit.

There are several commercially available solutions to the problem; *UNIFORM* is one of the first. *UNIFORM* is a program that will format your disks to any one of a phenomenal number of other computer formats. The version reviewed here was prepared by MicroSolutions for an old Kaypro II with no software or hardware modifications, and the compatible computer formats are listed in the tabulation below.

FORMATS THAT *UNIFORM* WILL PREPARE AND
COPY TO OR FROM CP/M

ACTRIX
CROMEMCO CDOS
CROMEMCO with Int'l Term. CP/M
DEC VT-180
HEATH with Magnolia CP/M
IBM with CP/M-86
IBM PC-DOS Version 1
IBM PC-DOS Version 2
IMS 5000
KAYPRO II
LOBO MAX 80
MORROW MD-2
NEC PC-8001
OLIVETTI ETV 300
OSBORNE I
OSBORNE Executive
PHILIPS PC-2010C
SEEQUA Chameleon CP/M
SUPERBRAIN JR
SUPERBRAIN 128 byte/sect.
SUPERBRAIN 40 track
SYSTEL II
TI Professional CP/M 86
TRS-80 Mod 1 Omicron CP/M
TRS-80 Mod 3 MM CP/M
TRS-80 Mod 4 MT CP/M
TRS-80 Mod 4 CP/M
XEROX 820
XEROX 820-II
ZENITH Z-90 48 TPI
ZENITH Z-100 CP/M

There are drawbacks to *UNIFORM*'s list of compatible computers. For instance, my version will only read from (and not write to) the TRSDOS formats. (This may be a peculiarity of the Kaypro II version; I hear that other versions allow CP/M to do TRSDOS transfers.) I can't trade with my Apple user friends, either. Apparently, the Apple disk is not the standard disk used by the IBM or CP/M devices.

The documentation for *UNIFORM* is a small, hard bound book with a bonded plastic film cover. The printing is quite readable, and the instructions are quite clear. However, this should include a warning that CP/M 2.2e will foul up the operation, and that *UNIFORM* should be operated using the CP/M 2.2 version that came with the machine. A pair of pages were transposed in printing (a slip of paper is enclosed with instructions to read

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page 4 before page 3). The main copy of the program may be stored in a pocket provided inside the cover, a good idea for protection and retrieval.

UNIFORM operates quite simply, with menus every step of the way. Help exists for the first menu, with very lucid directions. The main menu has three choices: "format," "write to" or "read from." You must format a blank disk in the other computer's format before you write to it from your CP/M files. (The only formatting option available to me was single-side, double-density, 48-tracks-per-inch, but that is apparently a limitation of my Kaypro II. Versions for other computers may have more options available.) Formatting is slow (substantially slower than that done by the CP/M 2.2e I reviewed earlier); Dwight Chew did some time comparisons in the July BAKUP (Bay Area Kaypro Uses and Programs) Newsletter showing *UNIFORM* slower than the standard Kaypro CP/M copying/formatting programs or *UNIFORM*'s chief competitor, *COMPAT*. I don't consider the slowness of formatting a serious problem.

> **UNIFORM is a program that will format your disks to or from any one of a phenomenal number of other computer formats.**

The copying function is also easy. You can instruct the program to copy a string of files; you can copy one file or a dozen. The directory of the disk to be copied is displayed with a number assigned to each file, and you simply type in the number of the file(s) you want transferred. The directory should show how many bytes are being transferred, so you don't try to overload a disk, but . . . . maybe in an upgraded version.

There are frequent warnings in *UNIFORM*'s documentation about the fact that programs (COM files) may be copied but will not run in the new format or computer. That's not a surprise, when you think about it. Each computer has unique sets of circuits for the electrons to run around in the chip(s), and the instructions to control their running have to vary from computer to computer. It would be like trying to drive in Baltimore using a Cleveland street map—you could move, but nothing meaningful would result.

The documentation says that BASIC programs may be transferred and run (provided you have an appropriate BASIC compiler). I expected that the BASIC programs might not run optimally and might need a little tweaking; that suspicion was confirmed when I sent some BASIC game programs (from public domain, of course) to a friend with an IBM PC. One of the thirteen ran correctly, some ran with errors, and lots had compiling errors. Luckily, my friend is a BASIC programmer, and will be able to iron out the difficulties.

In late July, responding both to Dwight Chew's article in the Newsletter and my observations on *UNIFORM*, MicroSolutions offered me an updated version. According to their tests, *UNIFORM* is only slow on older Kaypro machines. Not having received the updated version two months later, I can't comment on it, nor have I verified their statement about *UNIFORM*'s speed on other machines. (MicroSolutions, 125 South 4th St., DeKalb, IL, 60115.)

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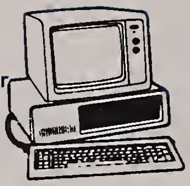

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As The Apple Turns

New Products, Plus: See You In Court, Steve...

The eyes of the world have certainly been directed at Cupertino lately, but, doubtless to Apple Computer's chagrin, most of the hoopla has been less concerned with the company's long-awaited new products than with its ongoing dispute with departed chairman Steve Jobs.

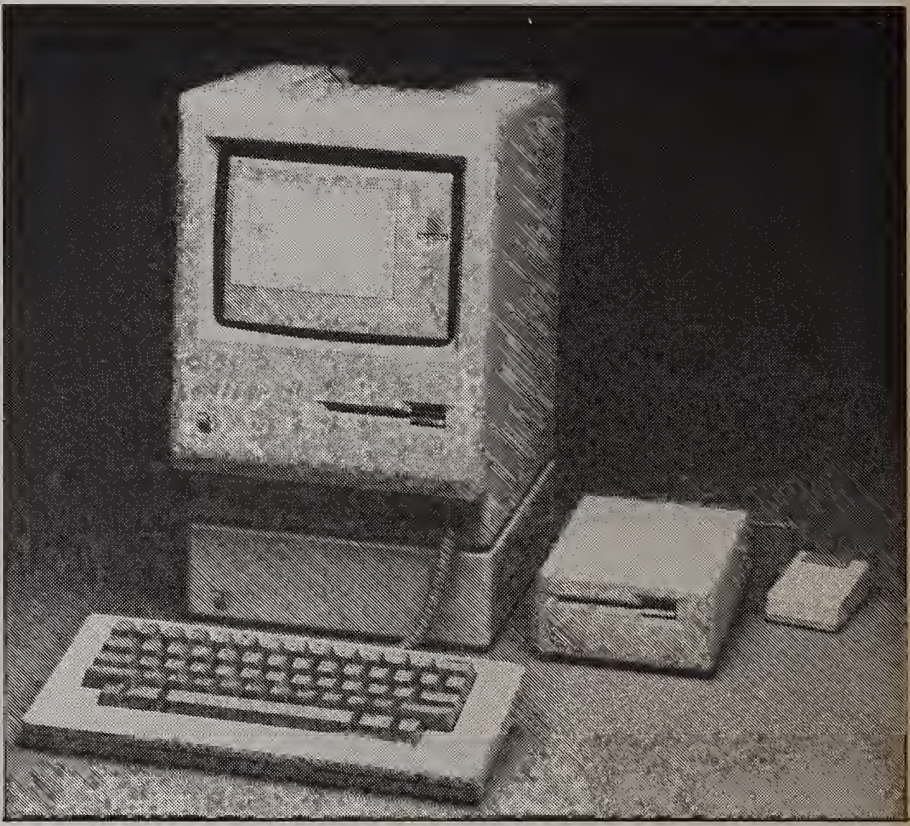
More Memory
Better Printer
New Monitors
Bigger Lawsuits

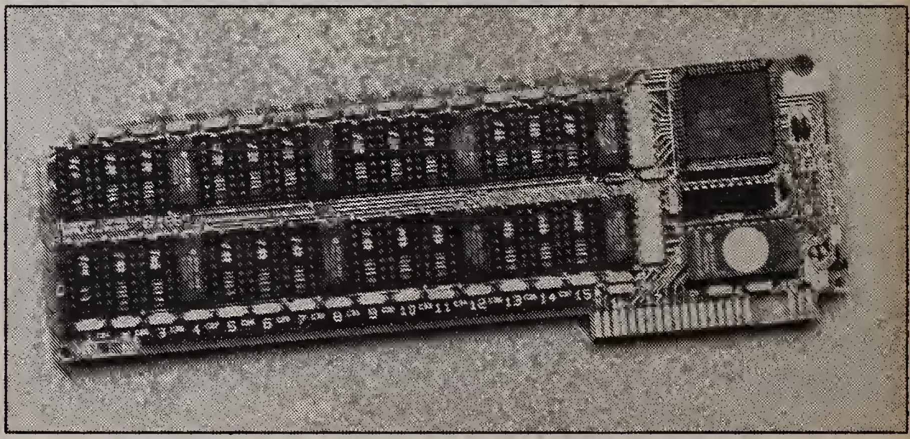
On September 17, Apple announced a host of new products for the Apple II and Macintosh lines. In response to user demand (to say nothing of the independent efforts of third-party developers), the company introduced the Apple II Memory Expansion Card, which expands the internal memory of Apple II, II+ and IIe computers in 256K increments to a total of over one megabyte. At the same time, Apple announced the UniDisk 3.5, a 3½" double-sided disk drive which is capable of storing 800K of data, more than five times the current capacity of Apple 5¼" floppy drives. UniDisk is currently available from authorized Apple dealers for a suggested retail of $499; a separate accessory kit, including the interface card for II, II+ and IIe computers, is available for $69. No release date or price was given for the expansion card; Apple announced its impending arrival so that software developers can take its features into account. Apple also announced new composite color monitors for the IIe and IIc.

At the same time, the company announced several products to strengthen the Macintosh's position in the business computer market. Probably the most significant new item is the Hard Disk 20, an external 3½" Winchester hard disk drive that connects to the Mac's disk drive port and is designed to fit easily under the computer. Since it gives the Mac 20 megabytes of storage capacity, the Hard Disk 20 is expected to enhance the computer's status as a powerful business machine; it's scheduled for November release at a suggested retail of $1499, with quantity shipments expected in early 1986. Other new products are the Switcher utility, which allows users to combine up to eight applications (depending on available memory) and instantly switch among them, and the ImageWriter II, compatible with all Apple II and Mac machines, with three print modes including near-letter-quality, the ability to print in six colors and black, and increased speed. The printer is currently available, as is the new Apple Personal Modem (again, for Apple II and Macintosh), which operates at either 300 or 1200 baud, plugs into a wall outlet and is compatible with most communications software.

Alas, however, the media excitement over the new products was somewhat overshadowed by daily rashes of speculation, innuendo and mud-slinging concerning the company's troubled relations with deposed co-founder Steve Jobs. Jobs, who was effectively ousted from power several months ago, submitted his resignation from Apple, at the same time announcing his intention of forming a new company to create, among other things, a Unix-based desktop computer, and likewise his plan to take five Apple employees, including engineer Richard A. Page, with him.

Apple, in turn, filed suit against Jobs in Santa Clara County Superior Court on September 23. According to the company's press release, Jobs and Page had breached their fiduciary responsibilities to Apple by violating agreements, signed as a condition of their employment, "not to use confidential or proprietary information of Apple for the benefit of any competing enterprise or in any way contrary to the best interests of Apple." Not only did both men have access to confidential and proprietary information regarding Apple's business strategies and product development, the suit maintains, but Jobs is alleged to have deliberately deceived the board of directors by secretly making plans for the new company while still serving as Apple's Chairman of the Board.





New products announced by Apple include memory enhancement products for both Macintosh and Apple II. The Hard Drive 20 fits under the Macintosh and gives it 20 megabytes of memory; the Memory Enhancement Card for the Apple II increases the machine's memory in increments of 256K to a capacity of over 1 meg.

The suit seeks to prohibit the defendants from using any of Apple's confidential or proprietary information, and from recruiting Apple employees or ex-employees as a means of getting such information. Monetary damages are also being sought, and no immediate resolution seems likely.

As an irreverent postscript to all this, Software 1st, a Marin company specializing in Franklin computers (an Apple II clone whose manufacturer, cognoscenti may recall, has had its share of disputes with Apple over proprietary information and products), has announced the formation of The Jobs Board, 300 baud, at (415) 459-1544, to deal with issues like "What will he do next? Movies? Politics? Does he really use that video disk player?"

So, for the latest scurrilous trivia, call The Jobs Board. For the latest in new products from Apple, consult your local dealer or user group for information.

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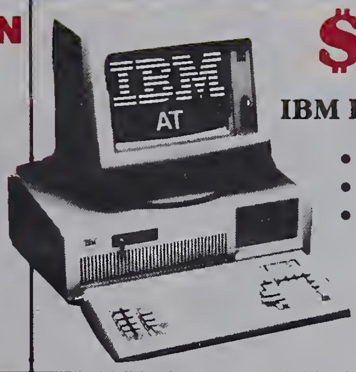

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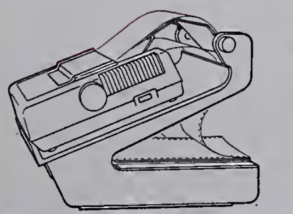

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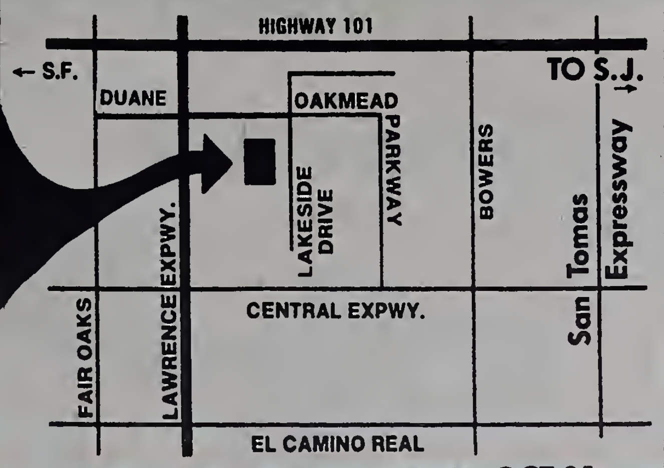

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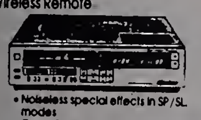

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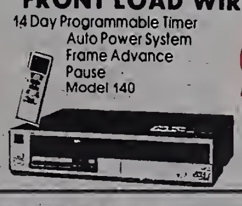

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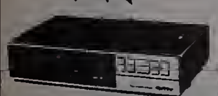

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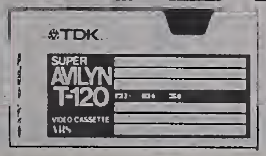

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- Two Button Mouse Standard.
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- 68000 CPU Architecture.
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- MIDI Interface.

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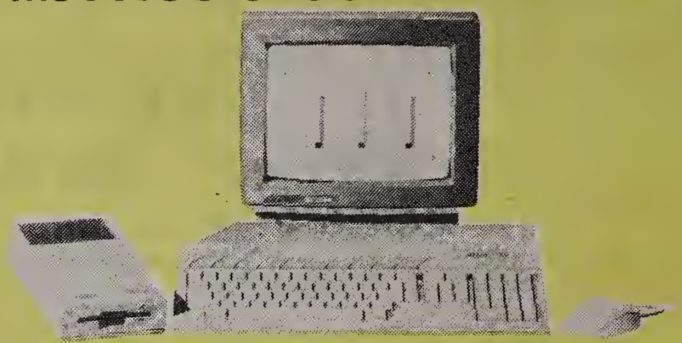
THE CONS: You Don't Own One Yet!



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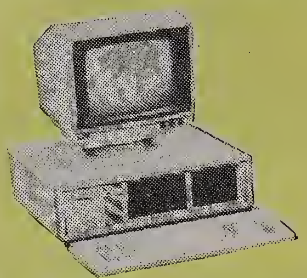
Strictly speaking the Fox isn't IBM compatible, but will run hundreds of the same programs including dBASE II, Multiplan, and Turbo Pascal. Because the Fox is born on a totally automated assembly line in Japan we can back it with a full one year limited warranty. For a free booklet explaining why the Fox is your best buy call 1-800-FORAFOX and leave your name and address after the beep.

The Fox **$995**

The Quick TurboFox Jumps Over The Big Blue Clones



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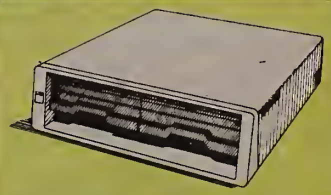

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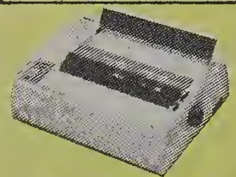

To quote PC magazine, "The (NP) printer is a sure thing..." If you're considering the purchase of an Okidata 92, or an Epson FX-80 give us a call before you spend $50 to $100 more for an inferior printer. Let us send you an actual print sample from the NP, and additional information on the features that make the Olympia NP the best value in dot matrix printers. **$295**

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Disk Drive Your New Chevy

This may be the first example of the interactive electronic advertising brochure. Someone at General Motors (a corporation that had its last new idea circa 1923) finally realized how many Apple personal computers are out there in American homes.

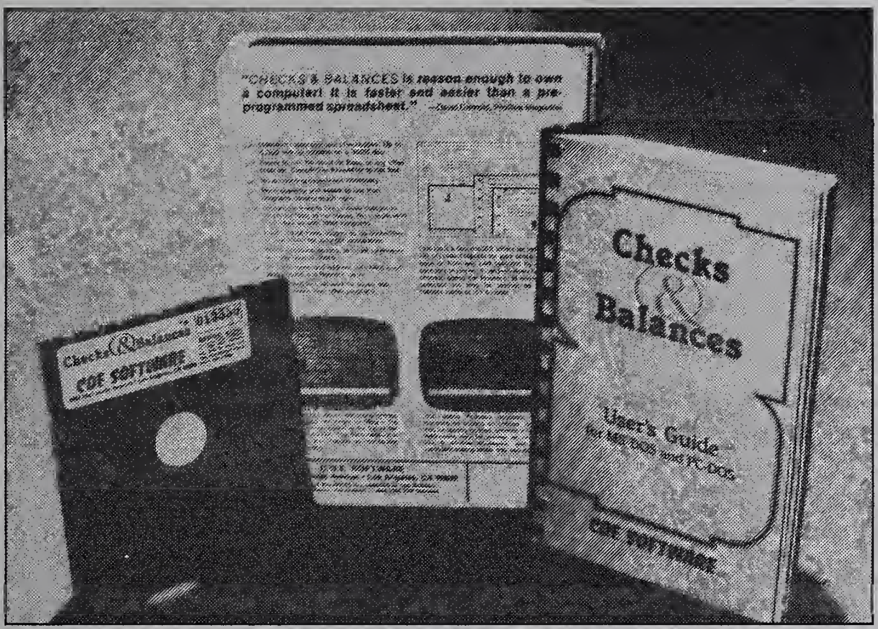
So they brought us Chevy Tech. As the disk boots up we see a high-res graphic of a Camaro and hear a little merry tune. This is the last creative programming we will get in this item. The text is all 40 column upper-case, to accommodate even the most basic Apple II, and the program is constantly going back to read bits and pieces from the disk, advising you that it is "COLLECTING INFORMATION — PLEASE WAIT." The program is menu-driven, and traps errors nicely. It is not copy-protected, but an accompanying leaflet takes three paragraphs of legalese to tell the prospective pirate that DOS 3.3 belongs to Apple Computer, Inc. in no uncertain terms.

"Without leaving your home, the Vehicle Selector Program allows you to 'build' popular Chevrolet car and truck models to your own specifications, including options, and arrive at a total price...," explains the accompanying letter from Mr. Thomas A. Staudt, the General Marketing Manager. You can have anything you want, as long as it is a Camaro, Cavalier, Celebrity, Blazer or S-10 pickup. Manufacturer's Suggested Retail Prices are current as of January, 1985. I was truly amazed at how much it is possible to spend on options, when all you have to do to pile more stuff on your wagon is to make a few keystrokes. The program is set up to print out your choices on any Epson printer (you can alter the code yourself to accommodate other printers). The BASIC program is not set up, however, to reject stupid choices, such as incompatible options or duplications, so you can create some automotive monstrosities.

A very simplified finance calculator, similar to that in many home accounting packages, allows you to compute payments based on any interest rate you input. Another option allows you to estimate the cost of ownership compared to your present wheels, to "try out" various economies, and to maintain a service cost record. At worst, you get a free diskette out of this deal. It represents a first crude effort at advertising through the home computer. As hardware, software and the mind of the marketing manager grow more sophisticated, we can expect to see more of this. (Disk available from Chevy Tech, P.O. Box 500, Troy, MI 48007-0500.)

— *Mike Markowitz*

PC FAIRE PRODUCT INTRODUCTIONS


"CHECKS & BALANCES is reason enough to own a computer! It is faster and easier than a pre-programmed spreadsheet."
Checks & Balances
CDE SOFTWARE
Checks & Balances
User's Guide
for MS-DOS and PC-DOS
CDE SOFTWARE

Checks And Balances is a financial planning and management program for the home and small business

***Checks And Balances* by CDE Software**
The makers of *COMPAT* and *MITE* introduced a new version of their home/small business financial planner/manager program for under $75. The commands are in English with no menus; on-screen space is allotted to make the check register look like your own checkbook record. The check register scrolls, or pages, just like your checkbook, too. *Checks And Balances* includes on-screen editing, which its publishers say works just like a word processor. It is available for MS-DOS, PC-DOS and CP/M computers. (CDE Software, 2463 McCready St., Los Angeles, CA 90039, (213) 661-2031.)

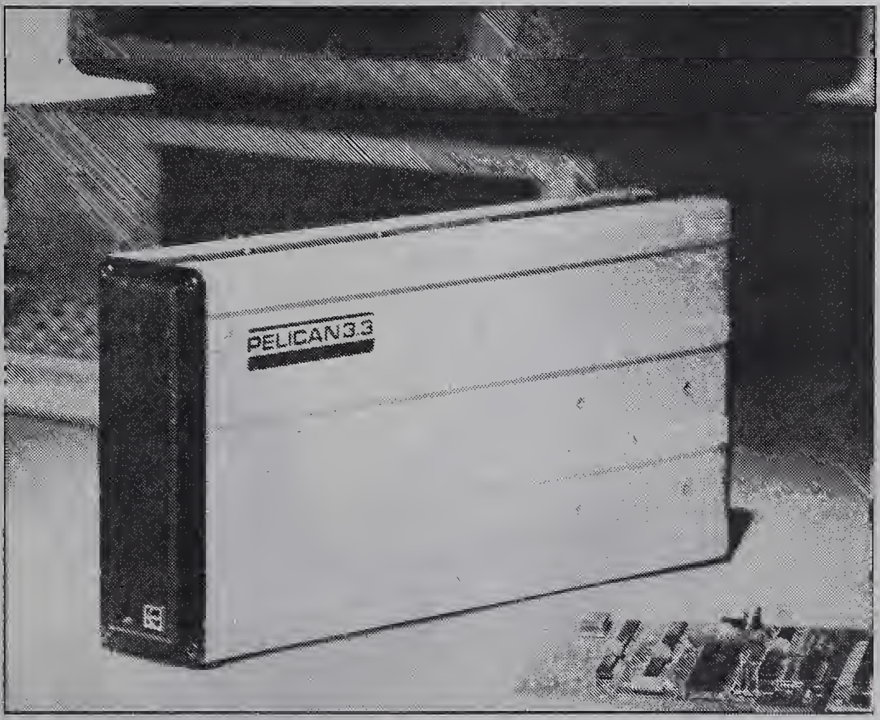
***PathMinder* by Westlake Data Corporation**
A small company in Texas has introduced a "visual shell" for DOS, essentially a multiple choice library utility with menus that organize your disk directories into a rational tabular form. The program also allows you to direct operations with simple (non-cryptic, in their words) commands. It is among the many programs now available for under $100. Apparently this Texas firm is run by an eclectic group (self-described as a Jew, a Baptist, a Catholic and an agnostic) who get together on Saturdays for non-business discussions, and they were impressed by Willie Nelson's contribution to hunger in Africa. The Westlake software offering was made with the proviso that purchases during Sept./Oct. will have a third of the purchase price given to the USA FOR AFRICA group (Westlake Data Corp., P.O. Box 1711, Austin, TX 78767, (512) 339-8400).

***Media Master Plus* For PC-DOS From Intersecting Concepts**
The popular disk-to-disk translator program now has an enhanced version for PC-DOS devices. Now you can translate your ASCII files from a large number of CP/M devices to be read by your IBM or compatible, for under $60. The added attraction is that this package includes a Z80 emulator program called ZP/EM that runs CP/M software on your PC-DOS device! You can select Osborne, Kaypro or Zenith terminal emulation, at an effective speed of one to two MHz for hardware-independent programs. (Intersecting Concepts, 4573 Heatherglen Ct., Moorpark, CA 93021, (805) 529-5073.)

Visionary 1200XT Modem From Visionary Electronics Inc.
This new buffered modem has enhancements based on inclusion of a battery to allow independent operation. It has its own internal clock/calendar and up to 48K of active memory for sending, receiving or storing messages. The onboard software gives the 300/1200 bps modem the capability of sending or receiving messages automatically with the host computer turned off. (Visionary Electronics, 141 Parker Ave., San Francisco, CA 94118, (415) 751-8811.)

Mercury 1200 By Mercury Modems
The simple modem has arrived, with one light and two switches. A new non-Motorola chip design allows simplification of the smart modem, while maintaining Hayes software compatibility. Documentation is readable, even understandable. Operating automatically at 300 or 1200 bps, this smart modem puts on-screen messages about status in plain English. (Check with local dealers for availability.)

Pelican 3.3 from Pacific Micro Systems Inc.
This IBM PC peripheral uses a Kodak half-height drive in an aluminum housing to attach a 3.3 Mbyte floppy disk storage unit externally. The 5¼" high density diskettes will store 2.75 Mbytes of formatted data. (Pacific Micro Systems, 160 Gate Five Rd., Sausalito, CA 94127, (415) 331-2525.) — *Robert D. Athey Jr.*



The Pelican 3.3 is a 3.3 megabyte external floppy disk storage unit for IBM PCs and compatibles.

WHO ELSE WISHES THEY HAD FASTER, CHEAPER, dBASE?

My dBASE III Disk Was Swallowed by a Fish, But My Programs Still Ran! MUCH FASTER

Do your dBASE programs run too darn slow? Are you throwing away thousands of dollars on copies of dBASE or RunTime? Read my fish story and our free brochure to learn WordTech's better way.

When that giant fish swallowed my dBASE III system disk, I didn't know what to do. Then I remembered the WordTech compilers for dBASE II and III. I bought one last week from dataBASE Specialties, but never had time to open the box. They claimed that programs processed by the compiler will run by themselves; that I wouldn't need dBASE any more. Well now was my time to find out!

Compiling was easy
Two simple commands turned my entire application into high-speed machine language. I didn't have to change anything, and it only took a few minutes.

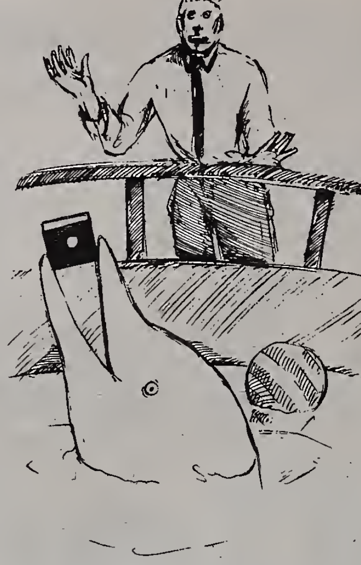
Compiling made my programs run much faster
It was amazing. The screens that were compiled from format files snapped into place instantly. My program logic ran at least twice as fast. I was starting to like that fish!

Compiling was like getting dBASE for free
I will never have to buy another copy of dBASE or RunTime. That one copy of the compiler is all I will ever need. I can compile all the programs I want and run them on as many computers as I want, with no fees or royalties to anyone. *(Remember: compiled programs run by themselves, without any Ashton-Tate products.)* That fish saved me thousands of dollars!

Compiling protected my dBASE source code
The only thing I turn over to my users is the machine language files that come out of the compiler. They can't see or modify my source code. How do you say "thank you" to a fish?

Compiling kept me compatible, plus. . .
My compiled applications use real DBF, NDX and MEM files. If I still had a dBASE disk, I could switch back and forth freely between dBASE and compiled code, using the very same data bases AND INDEXES. The compiler gives extras like 80 files open at once!

Compiling expanded my market
My compiled applications will run on IBM PC's, of course. But they will also run on ANY other machines with the MS-DOS operating system, including Compaq, Wang, HP, Dec, etc. *(Remember again, your customers don't need a copy of dBASE. Anyone can run your compiled programs).*



"I don't pay for dBASE or RunTime any more. That fish showed me a better way!"

DON'T PROCRASTINATE-CALL NOW!

If anyone ever tells you that dBASE is the only way to run a program written in a dBASE language, that's just a fish story. The WordTech compilers for dBASE II and III run the exact same programs, only much faster and without paying for dBASE.

FREE BROCHURE GIVES THE DETAILS
Don't buy Clipper until you see this!

Is a dBASE compiler right for you? If so, which one? Our free brochure, *How to Choose and Use a dBASE Compiler,* will help you decide. It gives all the details about WordTech's new way to run your dBASE programs, and frankly discusses the limitations and choices. For a free copy, leave your name and address on our answering machine, 24 hours a day. Why not call right now?

PLEASE CALL (415) 652-2790

For questions, or to order a compiler with a 30-day money back guarantee, call (415) 652-3630. We offer the WordTech compilers for $550. Our discount price may seem expensive, but remember, it allows you to compile any number of programs to run on any number of machines. Included is one year of FREE telephone support and FREE updates as the compiler is improved.

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News From The Robotics Expo

PHOTO: ROBIN J. DUNITZ

Visiting from Kenosha, Wisconsin were robotics enthusiast Thomas Madison and his 6'3", 350-pound creation, Prime.

When will home robots be able to mow the lawn or clean house? Will people buy a personal robot before it can do such useful tasks? Fundamental questions like these brought together several hundred robot enthusiasts for the second International Personal Robot Congress and Exposition (IPRC), held September 6 – 8 at San Francisco's Hyatt Regency Hotel. Manufacturers, garage inventors, retailers, educators, and futurists heard keynote addresses and participated in workshops on robots in education, human services, and space, hardware and software design, and making money in the infant robotics industry.

The exhibit hall had a festive circus-like atmosphere, as about 30 manufacturers and hobbyists demonstrated their creations. On Saturday, especially, children of all ages chased after friendly-looking robots that were parading around, and stared in wonder at the larger, more intimidating ones.

During their short morning talks, Nolan Bushnell, of Atari fame, and Unimation founder Joe Engleberger carried on last year's debate over what will someday make a successful home robot.

Bushnell, maintaining his belief that consumers want robots that are fun, described his new Petster product. He is hoping the public has fewer expectations for a robot pet than it did for his more sophisticated and expensive, but financially unsuccessful, TOPO robot. Since Bushnell has "never been asked if a cat can do windows," his new toy won't even attempt to be useful. Instead, it will have four personality modes, and will respond to 56 distinct instructions, input with clapping. A small version will sell for $30 – $40, and a larger one for $90 – $100.

Engleberger's background in industrial robotics gives him a more practical orientation. In his talk he encouraged developers to continue to work on providing robots with independent intelligence, better sensory perception, and the ability to do useful tasks. In his view, these qualities are necessities for home robots. Alluding to an earlier comment by Bushnell, Engleberger said he'd "rather watch Bill Cosby (instead of a robot) tell jokes."

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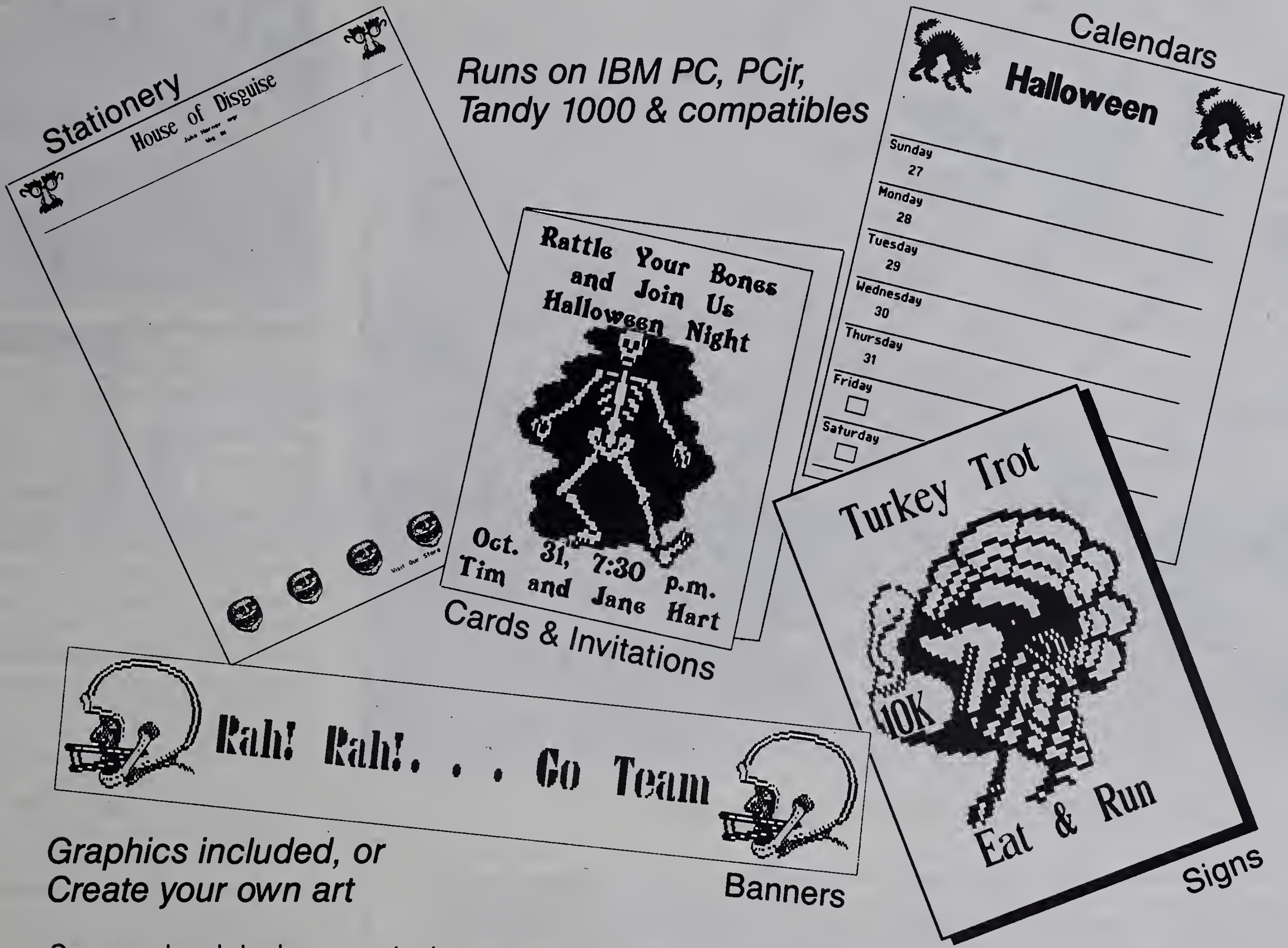
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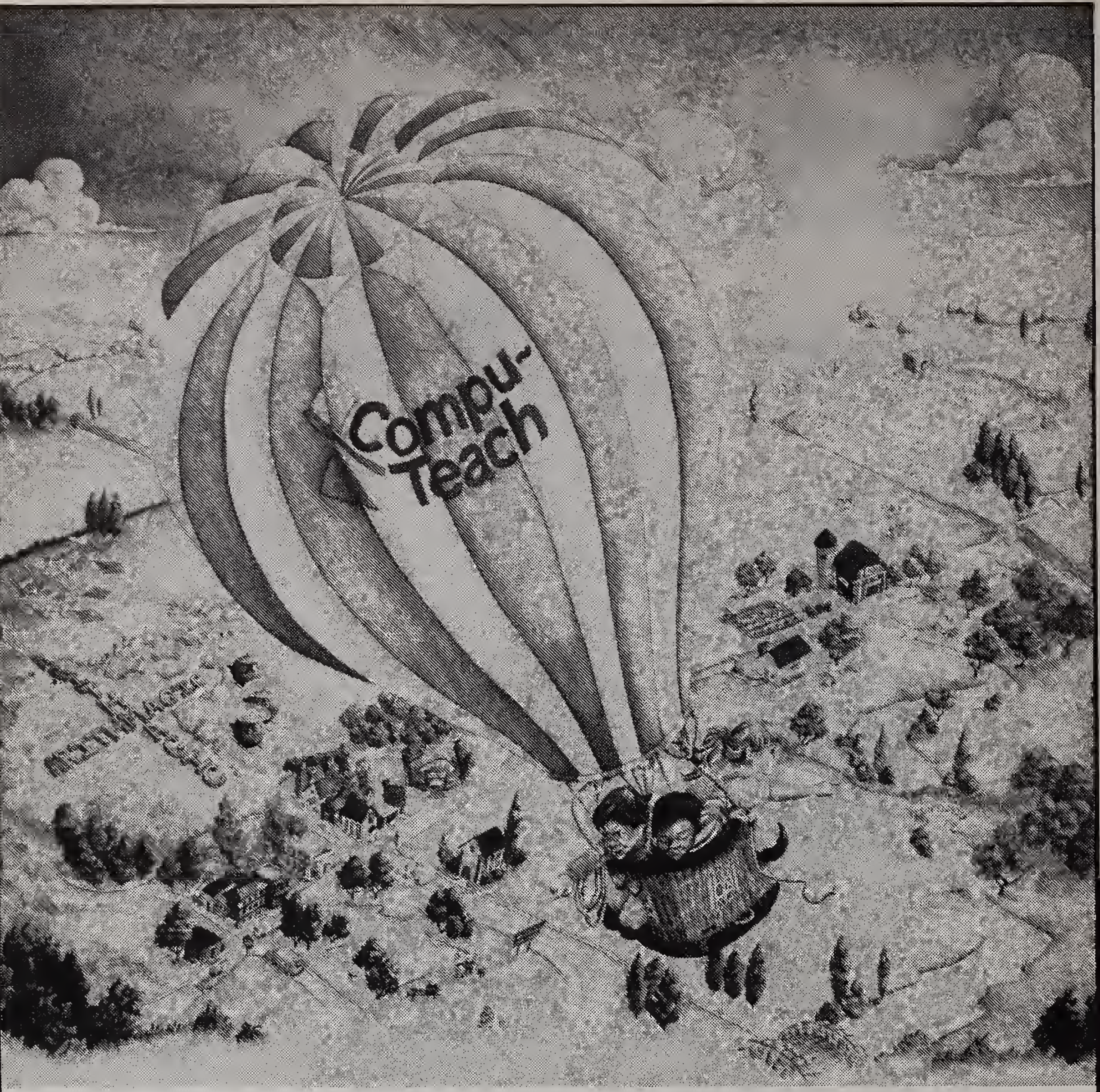

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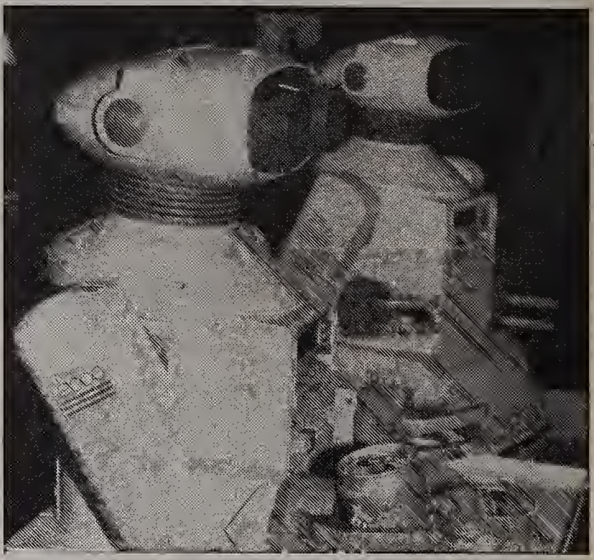

PHOTO: ROBIN J. DUNITZ

Tomy's Omnibot drew some of the show's biggest crowds—it's a fully programmable robot with an articulated arm, wrist, hand and head, as well as a detachable motorized serving tray.

April, 1984, when the first IPRC met in Albuquerque, New Mexico. Most household chores are still out of reach of today's androids. Certain technical problems, involving robot perception and locomotion, remain to be solved in a cost-effective way.

Just because robots aren't yet the perfect servant doesn't mean they are without value today. At IPRC three major applications were described: entertainment, education, and aids for the disabled.

Perhaps no one questions that robots can be fun. But just in case, Tomy Corporation, the toy maker, did a terrific job of capturing the biggest crowds at its exhibit hall booth, as company representatives demonstrated Tomy's extensive variety of robot toys. Everyone seemed to enjoy watching the new top-of-the-line Omnibot 2000, retailing for $500, as the 26-inch-tall robot demonstrated how, using its motorized arm, it can pick up a soda can from an attached serving tray. Tomy's new dancing, running, and jumping five-inch robots, Flipbot, Spotbot and Hootbot were also popular with passersby.

Speaking at the "Robots in Education" workshop, Mary Jane Spencer, a Pennsylvania educational consultant, described how robots can contribute to the classroom experience: "Programming a robot to speak, recite poetry or participate in the sixth grade talent show becomes an exercise in creativity and a stimulus to reading and writing science fiction. Mathematics skills, too, are enhanced and brought to life when the robot is integrated into time and distance calculations."

At the beginning of the "Robots in Human Services" workshop, moderator and health researcher K.G. Englehart showed part of a television program on several of the exciting research projects underway at the Palo Alto Veterans Administration Hospital. Their prime objective is to create robots that can respond to human needs—become friend, companion and tool—especially for those with disabilities allowing only limited mobility.

In one laboratory researchers are developing a three-wheeled, 350-pound indoor vehicle, with a two-mph cruising speed, for those who are physically, but not mentally, disabled. A robotic arm, attached to the mobile platform and responding to verbal commands, will permit a reach of six feet. In this way, quadraplegics and others without use of their limbs can gain significant self-reliance.

This year's IPRC demonstrated that personal robots are still at the "horseless carriage" stage of development, probably where home computers were about ten years ago. All those talented tinkerers, though, offer hope that a smart home robot may soon rise from the mess of spare parts.

— *Robin J. Dunitz*

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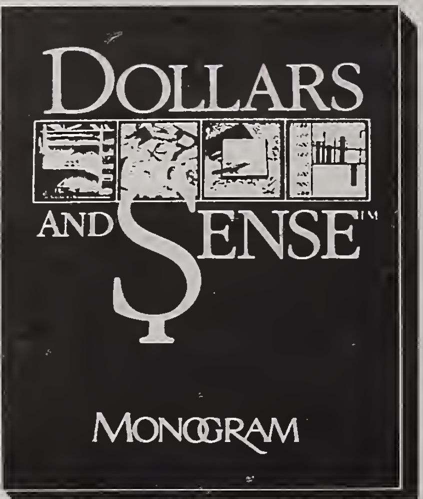

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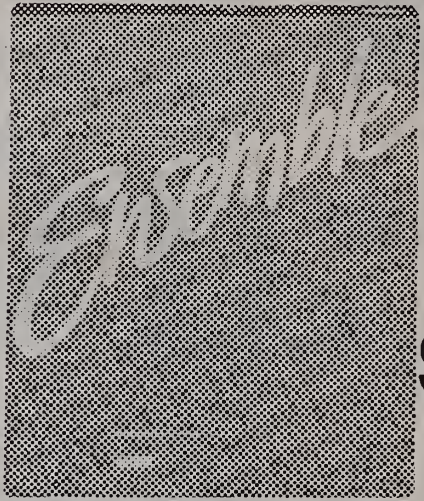

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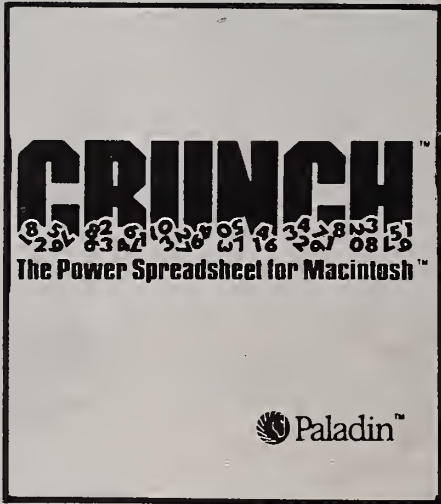

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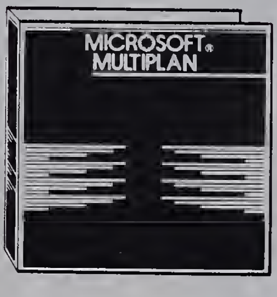

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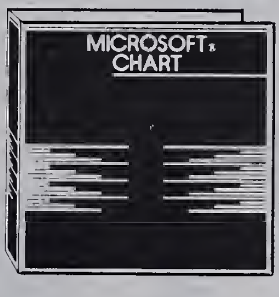

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MEGAHAUS:

Small Company, Mega-Success

PHOTO: ANN SUMMA

Paul Stannard (l) and Paul La Costa of Megahaus attribute a good portion of their company's success to the decision to concentrate on the Apple II and Macintosh software market.

When most people think of a computer company, they tend to think of giant computer firms like IBM, DEC, or Apple; images of thousands of employees and massive, gleaming buildings in Silicon Valley support these thoughts. Yet not all of the companies in the computer industry fit these mighty images. More often than not, some of the most innovative and technologically advanced firms, both hardware and software producers, are small, more compact firms that make up the sometimes nebulous world of the "Third Party Vendors." From these third party vendors come many of the products and ideas that eventually become standards in our industry. In fact most of the giants of the computer industry, names like Microsoft, Lotus, and Ashton-Tate, started as, and still are to a degree, third party vendors. How they differ from their larger corporate brothers could take up a book. Suffice it to say that there are two major differences of note that are of interest to us. They are smaller by several orders of magnitude, and, as a result of this lack of size, they are still small enough that truly new and innovative ideas can still make themselves known within their sometimes cramped office spaces.

Such a company is Megahaus. They are not big: they have less than 40 employees, and they are housed in a small bank of offices in an industrial park. They are not even located in Silicon Valley or, for that matter, Northern California — one of San Diego's Sorrento Valley industrial parks is their home. Nevertheless, this tiny company is one to sit up and take notice of. The reasons are simple: results. Currently, Megahaus has more software packages for the Macintosh, four, than any other third-party software vendor. In addition, they also have a runaway bestseller for the Apple II, *Megaworks*, their add-on package for *Appleworks*. As this article is going to press, they are announcing their newest Appleworks add-on product, *Reportworks*. And more packages for the Apple II and the Macintosh are already on the way. Clearly, for Megahaus, these are the best of times.

It was not always that way though. Just two years ago, they were facing a serious crisis, their product line was being squeezed by increasing competition and a severe lack of visibility in the marketplace. Quite simply, they did not have a unique or special prod-

San Diego-based Megahaus has 35 employees. They expect to do $5,000,000 in business this year.

By John D. Gresham

uct, or line of products. Just two years later, they now have *two* such product lines for the Macintosh and the Apple II. How they did it is one of the subjects that is explored in the interviews that follow. But there is more here than just a small company finding its market niche. For what we have here is a prime example of the flexibility and power of third-party vendors. Consider that Megahaus has only 35 employees and is currently doing business at a five million dollars per year pace.

Paul La Costa, who co-founded Megahaus with Paul Stannard in 1983, talks candidly about Megahaus' early problems, and his feelings about the industry and his competitors, in particular about the ethics and moralities of the quickly growing and evolving microcomputer business.

What were the first products that you put out when the company started?

We organized the company in January of 1983 and put our first product on the market, a $59.95 word processor called *Megawriter*, in June of 1983. What we have learned since then, and what we believe, is that you cannot sell microcomputer software through retail stores and distributors for less than $125.00. We had a series of programs that were in the $59.95 to $99.95 range, and we found that you just couldn't support that kind of software and sell it in the kind of quantities required to make a profit.

Why?

You just can't afford to market software in that price range, in the numbers per product being sold today, and provide anything approaching the required level of after-sale support required by the customer. This lesson is what we learned as a result of our early software offerings into the market. Early on, we had products on the IBM PC/XT, the IBM PCjr, and Apple II. And then *Appleworks* came out, and that really bit into the sales of our Apple II products like *Megawriter*, *Megasell*, and *Megafinder*. More importantly than that though, we felt that we were in the wrong price range. So, the combination of those two things forced us to shift gears. About the same time as this was happening, the Macintosh was announced and we managed to become one of the original "seeded" developers for Macintosh software.

What did that involve?

"Seeded" means that we were chosen to be among the initial group of third-party software houses that received Macintosh software development systems and documentation. In addition, Apple also supplied us with all the marketing and technical support that we required to get aboard with the system. This was an excellent move on Apple's part, if I do say so myself. This is because, other than Microsoft and Apple, Megahaus was the first software company out with a Macintosh product, *Megamerge*. This was back in April of 1984.

Since then we have been extensively involved with Apple in a number of different promotions and products. Most recently, we were involved in Apple's rollout of new products for the Macintosh. We visited 26 cities in just five days, showing their dealers all of the new goodies like the laser printer and the Macintosh office. We were one of only four software houses invited along to show off our products alongside of the Apple-developed products. When you are in the company of people like Microsoft, Peachtree, and Lotus, you are doing *quite* well. We've been in Apple's booth at numerous trade shows. On the whole, we work very closely with Apple.

You currently have one of the largest lines of third-party software for the Macintosh. Could you give us a perspective on the early days of your Macintosh software development?

I think that one of the things about the Macintosh that was most interesting was that when we started we were getting new updates and documentation from Apple every day. Even before that, just to begin, you had to read through thousands and thousands of pages of documentation. I think that this is one of the big reasons that it took the manufacturers so long to get their various software packages out on the market. One of the reasons that we were one of the first to get out on the market was that our programmer's background was in PASCAL. Since the Macintosh operating system is based around PASCAL, I think that this put us at an advantage as compared to our competitors. Many people spent their time "brushing up" on PASCAL just to be able to understand the Macintosh operating environment, and it took six to eight months for them just to be able to write their *first* packages. By that time, we already had two out on the market.

So the stories about the Macintosh programming manual being as thick as the Manhattan phone book and printed on the same kind of tissue paper are true?

Yes, only many times over! In addition, we had updates and replacement pages coming in *daily* from Apple when we were just getting started.

From a design standpoint, do your programmers *like* working in the Macintosh operating environment?

Our president, Paul Stannard, not only likes the Macintosh, but thinks that it's the future in our industry. And I think that there is a lot of evidence that the Macintosh user interfaces are now a standard format in the new generation of microcomputer software. For example, IBM machines and their clones now have pull-down menus and mice. I think that it's the right machine to be working with *right now*.

Why do you think you've done so well with your Macintosh packages?

I think that the number one reason for our success with the Macintosh is that we dropped any further IBM-related development programs and devoted ourselves to the Macintosh. We managed to free up a lot of programmers and time that way.

I think that if you look at most of the big players in the software industry today, they *are* IBM players. As a result, it's very tough for their programmers to shift gears when they go from doing an IBM PC development to a Macintosh project.

Our people, as I've said before, were already PASCAL oriented, and by dropping our IBM PC development programs, we have been able to really focus on getting the most out of the system. Our technical staff took a real liking to the Macintosh, so from a technical standpoint it was quite easy to get excellent results. From a marketing standpoint, the cost of entry to market a product for the Macintosh is just way below what you would have to spend for an IBM PC product. In fact, in the early days, it was more of a footrace of who could get a product out there, get an ad into *Macworld*, and get the people working in the field with Apple. If you could do that, you were established!

What is it like to design software for the Macintosh?

We really enjoy writing software for the Macintosh for a variety of reasons. One of the big ones is all of the help that we get from Apple. I would say that none of the other major hardware companies support, both technically and marketing-wise, their software vendors the way Apple does. They have their Macintosh college so that all of our programmers can go up and get the latest information on the system. We are in on the product plans, for both the Macintosh and the Apple II, so we know where Apple is really headed. This allows us to gauge what kinds of products we need to develop and market. On the marketing end, they help us quite a bit through their own ads, brochures, as well as commercials on TV. More important than that, though, we have access to their sales force and can train that force to push and recommend our products. That kind of promotion you just can't buy for love or money.

From a design standpoint, how is it different designing Macintosh soft-

I think that the number one reason for our success with the Macintosh is that we dropped any further IBM-related development programs and devoted ourselves to Macintosh.

ware from, say, IBM PC software?

One of the big differences is that Apple and their in-house software team has already designed a number of functions for use by software designers. For example, one of the reasons that we can do the great graphics on the Macintosh is because Apple has already designed some of the most powerful graphics functions into ROM for us. This is how we are able to provide the user with a powerful forms processing capability in *Megaform*. In fact, I believe that Apple has over 100 man-years of software development time in the onboard ROM of the Macintosh. You just don't have that in other hardware systems. They gave us a lot more tools and, as a bonus, a much more powerful microprocessor chip in the 68000.

Most Macintosh users use their machines to run already written applications packages. Is it very difficult for actual users to develop their own applications-specific programs?

Up until very recently, it was very tough. Now that the BASIC compiler is out, it's not so bad. But when the Macintosh first came out, the whole idea was that unless you were working with Apple, and had the development system, you couldn't write your own software.

That's changing a little bit. The Macintosh is clearly different from other machines like the IBM PC/XT and the Apple II in that it requires a serious software development effort for any type of utilities programming. [Apple's] wish to maintain a "closed-box" system which is a productivity tool seems to be becoming a reality.

What about your software for the Apple II family?

For the Apple II family, we decided to come out with an add-on for the *Appleworks* program. The reason was simple. *Appleworks* was quickly becoming the best selling software product for the Apple II. So we quickly came out with *Megaworks*, which is a spelling checker and mail merge utility for *Appleworks*. We sell it at $125.00 and it is currently well up on *Softsell*'s "Hot List" of bestselling software titles. It has been a *very* successful product for us.

Do you see development for the *Appleworks* operating environment developing into a whole series of utility packages like, say, the old PFS program series?

I think that's the way Apple sees software development for the Apple II series going. *Appleworks* is just one example of that though. I believe that they are going to continue to write other Apple II-based utilities packages, as well as encouraging other third-party software houses like ourselves to do the same.

What do you see the Apple II as today, and what do you see it doing in the future?

The Apple II is a product that has the best software base currently available, but it's getting to be old technology at this point. I think you will see the Apple II family go towards — and it's happening already — a more Macintosh type of machine. You will have the Macintosh operator interfaces with the mouse, the pull-down menus, and the icons. They will, in general, try to make it more "graphic."

How about the Macintosh, now and in the future?

The Macintosh is going to need a built-in hard disk. Also, I think at some point Apple or some third-party hardware producer is going to have to give us a bigger screen which, ideally, would be of legal paper dimensions. I believe those are the two most important areas for improvement in the near term.

Copy protection of software is getting to be a real hot topic in the computer industry. What are your views on the subject?

We recently introduced a new copy protection scheme on our Macintosh software where we allow the purchaser to make their own backup copy. In the case of our *Megadesk*, we actually allow them to install it on six different program disks. *Megadesk* is, of course, a desktop accessory that we wanted users to be able to install on all of their Macintosh utilities disks. Right now, our copy protection allows the end user to install it once on a hard disk, leave it there, and still have a copy, or to make one backup.

In our view copy protection is like having locks. It is designed to keep honest people honest. People who *really want* to steal your software will, if they have the time, probably be able to do so. Ultimately, if you can create a copy protection scheme, someone can break it.

I think that copying software is wrong, and it is illegal. Fortunately for us, in the business world, the kinds of programs that companies are going to buy for use by their employees, as desktop computers become more powerful, are not going to be copied due to their lack of utility in the home. And as far as the company who bought the software, there is just too much risk, in terms of liability, to encourage wholesale copying of copyrighted utilities software.

There is a lot of competition in the computer industry that seems to bring out the beast in everyone at times. Sometimes though, some people seem to do things that just are *not* responsible. From an insider's standpoint, what's the current state of ethics in the industry?

I am often concerned for the consumer. If I were about to buy a personal computer or software, not knowing anything about it, it must seem to be an incredible jungle out there at the retail level. There is a real need for morally stable people in our industry. Not just to have software and hardware companies that produce products that perform *as advertised*, but also at the retail level with people who will take the time to sell people what they *really* need, and support those customers after the sale.

I also get *very* concerned when I see very extremely low prices on hardware or software. I *know* that the people who sell these highly discounted products are operating at such a low margin, they can't possibly provide any kind of support to the customer after the sale.

How important is it to the consumer who is considering a purchase to have a place that they take their machine to get the service and support that they may require in the future?

I think that it is very important, especially in the first year of computer use for most consumers, where they need *someone* who is competent with the systems and can spend their time servicing the consumer's needs. You can't spend follow-up time training people and showing them how to use their products if you aren't showing a profit. It just doesn't work that way in business.

The Macintosh has been called the first of the second generation of personal computers. What do you see that second generation of personal computers, and second generation personal computer software, becoming?

I think that this can be broken into two answers. One, the second generation of personal computer will involve making the machines, and this includes the software, easy enough to use that the user can focus on what *they do*, rather than how to *make* the machine do things for them. I think that in the use of the first generation of personal computers, we all spent a lot of time wondering what, for example, *WordStar*'s command structure was all about, rather than using *WordStar* as a writing tool. That was a *lot* of wasted energy. I think that the major feature of the new generation of personal computers, like the Macintosh, is just to let people focus on what the machines *can do*, rather than how to use them. When it's a

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major accomplishment just to learn how to use a piece of software, that's wrong. And this, I believe, is what's wrong with most first generation machines and software.

The other part of the answer, and this ties more into the software, is that now people can spend the majority of their time working on solving their problem *with* the computer. A good example is our product, *Megaform*. *Megaform* was designed using to full advantage the power of the Macintosh operating environment with its spreadsheet, data base, and graphics I/O capabilities. Basically, *Megaform*, with its ability to replicate a form, fill it out, and conduct calculations on that form, allows for a major increase in productivity by people who develop, fill out, file, and generally use forms. This takes on an incredible importance when you consider that in America alone we spend almost *five billion* dollars a year on printed forms. In fact, a recent article in the *Wall Street Journal* indicated that we spend up to *twenty* times that amount filling them out. This is only one example of an industry, potentially worth over one hundred billion per year, that second generation machines and their software can improve the productivity of. Microcomputers and software from the first generation never even tried to address issues and areas like this.

When you first got started as a "seeded" Macintosh software developer, what did you have to work with in terms of equipment, software, and support?

We had to purchase a Lisa and a Macintosh. That included all of their certified documentation as well as their operating system software. To be considered for that, we had to submit to Apple all of our other software packages like *Megawriter* and *Megaspell* for review. I then went up and met with Guy Kawasaki [Apple's Manager of Software Products]. We went out, talked over our ideas over sushi, and were then allowed to pur-

Keeping Up With Apple

Says Holly Caid, Apple II product manager and customer support manager at Megahaus, "*Megaworks* is a *very* successful Apple II product which is doing remarkably well. Additionally, of course, we are looking at ongoing Apple II-based developments because the Apple II is a very popular machine with everybody. Schools love it. Small business people love it. Home users love it. As a result, we are working very closely with Apple to develop additional add-on products as they develop *Appleworks* and follow-ons."

What was the background on the creation of *Megaworks*?

Everyone had heard how wonderful and great *Appleworks* was going to be when it was released. When it came out, it did so without, in our opinion, two very valuable functions: mail merge and spelling checking. *Megaworks* was the first package to address these deficiencies, and the only package, to date, to utilize the same keystroke commands that *Appleworks* uses. In addition, *Megaworks* uses the exact same type of file format as *Appleworks*, so you aren't having to save different file formats. Basically, if users know how to use *Appleworks*, they know how to use *Megaworks*.

Megaworks doesn't do anything that *Appleworks* already does; all it does is spelling checking and mail merging. And it does these things on *Appleworks* documents. You do all your printing, all your text formatting, all your word and file processing, data base management, spreadsheet work, etc. with the existing *Appleworks* utilities.

Since its release, what kind of support problems have you had with *Megaworks*?

It's pretty much run itself as a product. In fact, the biggest problem that we have had with *Megaworks* is not being able to get enough copies duplicated and packaged for sale. It has been a remarkable best seller.

Apple has been very pleased with what we have done with *Megaworks*, because it makes *Appleworks* a really complete package. So they recommend *Megaworks* as an add-on to *Appleworks* in their advertising and marketing promotions. They have also been involved with training their dealers on our products. As a result, we have a lot of unseen sales people out there pushing our products.

You have a new product for the *Appleworks* operating environment called *Reportworks*. How does *Reportworks* function within the world of *Appleworks*?

Reportworks is a report generation system based upon the same general concepts as our *Megaform* product for the Macintosh. What *Reportworks* does is utilize *Appleworks* word processing, spreadsheet, and data base files, and pull together a formatted report. The product is primarily aimed at people who use pre-printed forms, though some simplistic forms graphics capabilities will be available to users. The user will have the capability to lay out, on a page, areas of text, graphics, data base material, or whatever, and then set up that material to do whatever is wanted. For example, one area, or cell, on a page might have an invoicing layout complete with inventory drawn from the data base, and calculations from the spreadsheet. Another area might contain a comments section. This allows the *Appleworks* user to set up report formats that really match the specific needs of that user. In addition, it allows for much greater use of the *Appleworks* data base system due to the expanded sorting capabilities of *Reportworks*. *Reportworks* will cost $125.00. I might also add that we will be bringing out an updated version of *Megaworks*. The reason for this is that version 1.0, which is the current version, does not support operations on systems with hard disks. The new version will correct this.

PHOTO: ANN SUMMA

Holly Caid is Apple II product manager and customer support manager at Megahaus. She's also a strong proponent of the Macintosh as a serious business machine.

How has it been developing software for a "mature" system like the Apple II?

As far as the Apple II itself, developing software is very simple. It has a huge installed base and is a relatively stable system configuration. As a result, developers are very comfortable spending development time and dollars on Apple II projects. The major problem with the Apple II is deciding what product to do and then doing it. I think because of our approach, and our consideration for future product development, we are going to key on enhancements or add-ons for the *Appleworks* operating environment. This is because Apple is not sitting still with *Appleworks*. I'm sure that we will be seeing a number of new internal changes and additions. If there's a tough problem in any software development effort, it's to keep all of the lines of communication open and clean. This is so that everyone involved in the project has all the current information to do their jobs and is not wasting time because of obsolete or superseded data.

Do you feel like the computer world is taking full advantage of the potential of the Macintosh system architecture?

I really don't. Especially in light of the development of a product like *Megaform*. There are other graphics oriented products for various machines. But *Megaform* is the first, and only, product on the Macintosh that I can truly say could not have been done on any other machine, at any price, but the Macintosh. I think that only now are designers beginning to take advantage of, for example, the graphics power of the system to address areas previously untouched by the personal computer. The typesetting industry is a good example. But as far as the consumer end of the Macintosh product spectrum, the answer is a flat no. Corporate America is even worse.

Why do you think software developers have not embraced all of the features of the Macintosh operating environment? Is the Macintosh system architecture that difficult?

Well, my opinion says that people still can't believe that the Macintosh can be both simple *and* powerful. It's because people who learned to use computers in the early days of computing can't really believe that clicking a mouse and a few keyboard strokes can do anything useful. Certainly not *real* work!

The software developers' learning curves with the Macintosh also seem to have been longer because some of them seem to have a block in their thinking that says that "this is a little too simple." Also, it's a completely different programming environment that takes training at Apple's "Mac College" to make full use of the system's capabilities. Not that they have had problems with the system, or that it's a difficult system to work with, but they still tend to have ideas and prejudices left over from their development of software from other systems. I even know one person who says, "I would really like the Macintosh if they would just repackage it to look like an IBM PC."

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When it's a major accomplishment just to learn how to use a piece of software, that's wrong. And this, I believe, is what's wrong with most first generation machines and software.

chase the Macintosh development system that I just described. I think that it cost us about $10,000.00 for everything to get started. We think it was a great deal.

What were some of the problems that you had with some of your early Macintosh software packages?

The very first package was *Megamerge*. There were still a number of "bugs" in the various Apple-developed operating system interfaces, which resulted in some problems in our programs. At the time it was an obvious annoyance. In the end, though, we worked through our minor problems and got the packages out. In fact, by the time we got *Megafiler* out, things were really running quite smoothly. We had a little trouble with their print manager at that point, but basically the problems that we had were pretty standard for our industry.

What has your advertising and marketing strategy been?

When we first started, our strategy was to sell a $59.95 word processor. So we thought a full page ad, comparing our product to that of our competitors, would be a good strategy. That competition, at the time, was a product called *Applewriter*, which cost about $150.00. As compared to our $59.95 product, we felt that *Megawriter* was easier to use and in general, a better product. So we made a *big* deal about the price comparison between the products. We found though, that performance, not price, is what the public uses to judge the value of a product. While price does need to be advertised, what you really need is product and corporate credibility. This means that you need to discuss things like product support, ease of use, etc. In fact, as we have gone along, we've found that text, rather than pictures, tends to make for an effective ad. You do need to have a graphic or picture to capture the reader's attention. But then, they want to know *what the product is and does*. People in the industry seem to think that the readers of ads already know *why* they should buy a particular product. More and more, though, we are trying to suggest to the ad readers possible reasons why they should buy our products.

Why?

I think it has to do with the shifting nature of the "average" computer user in the consumer market. We have been seeing a gradual shift away from the user being an engineer/scientist to that of a business person/student.

The other thing we are trying to do is to advertise in the less technical, user oriented, computer publications. For example, we haven't done much advertising in *Byte*. You are far more likely to find our ads in magazines like *Personal Computing* and *Creative Computing*. As a rule, we just stay away from the purely technical journals, and try to point out the benefits of our products to the computer/software users.

It appears that Megahaus has found its market niche in the computer industry. Could you tell us where you would like to see the company go in, say, the next five years?

First of all, we want to be an industry leader in the Macintosh and Apple II software arena. In addition, I would like to see us produce software for any of the other new second generation machines that are coming down the road. As a corporate goal, we hope to become a publicly-held corporation in the next few years. That's a personal goal of Paul Stannard and I. In general, though, whatever the machine, to produce software that increases productivity for *people* in ways beyond what we know now. ☐

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LA Times 7/29/85 Business Section

(RE: Beck-Tech's 1024K) The extra memory enhances the machine in three ways. First, it can be used to create a high-speed "RAM disk drive"; second, it can be used to run several programs simultaneously, and, finally, it can make better use of programs designed to take advantage of as much as a megabyte of memory.

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InfoWorld 8/12/85 Review Board

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—Steve Mann

San Francisco Examiner 5/26/85 Business Section

Their real winner is the full 1024K stomper they create. The 1024K upgrade is quite elegant. I loaded up a 128K Mac with this upgrade and found it bug-free. I recommend it.

—John C. Dvo

The New York Times 8/18/85 Business Section

What is needed is a machin whose direct memory capability measures a full megabyte, or 1024K.

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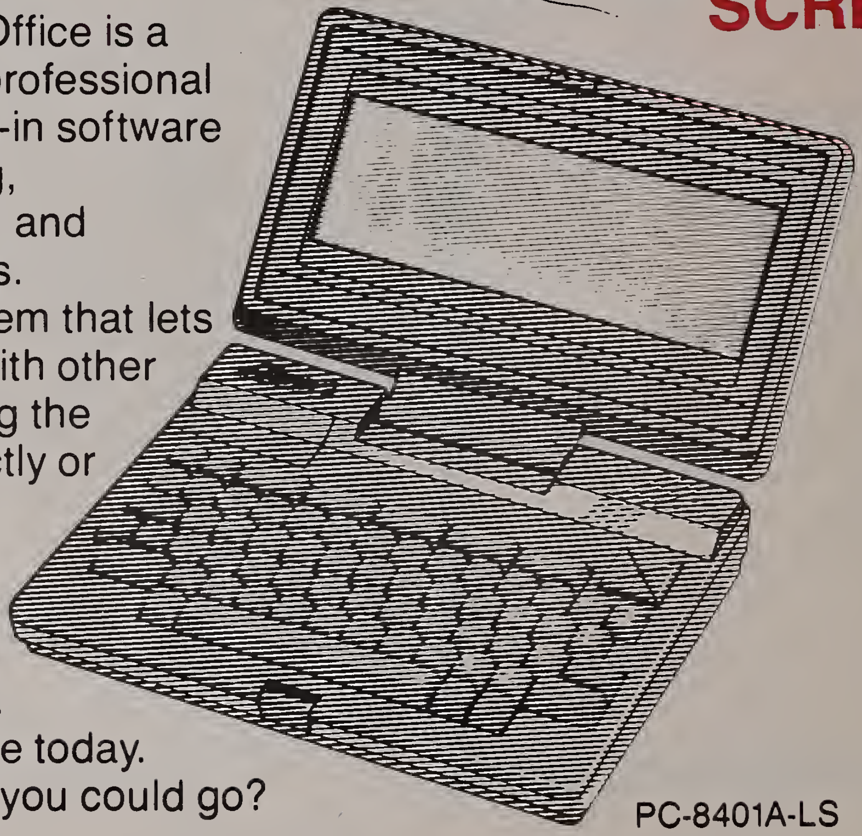

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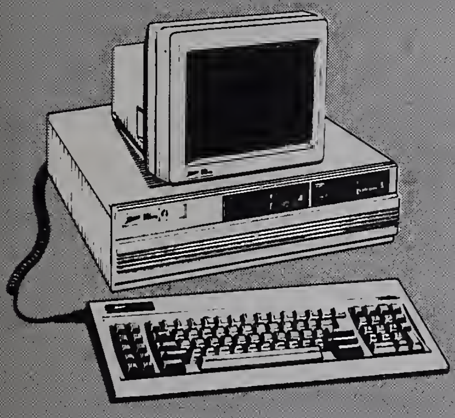

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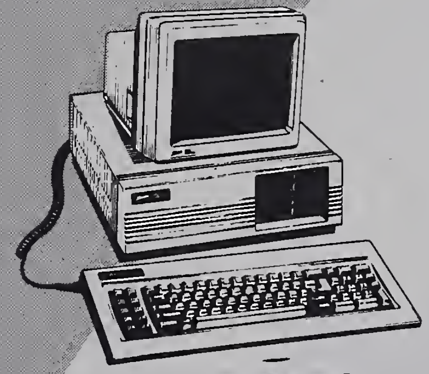

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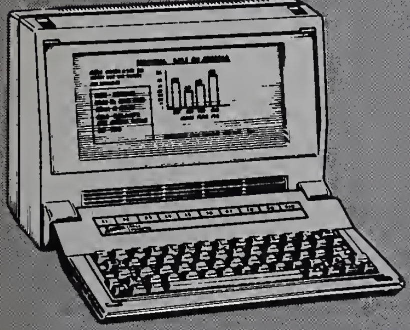

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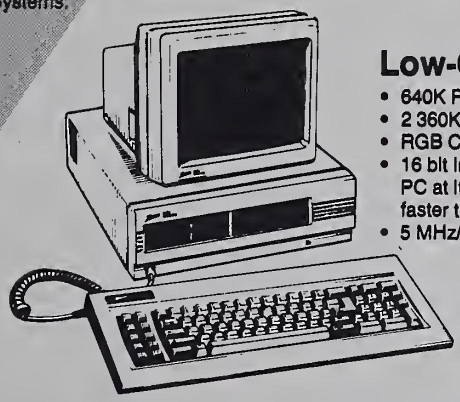

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SOFTWARE ENTREPRENEURS
'85

CASE HISTORIES

The road to success in the software world is fraught with peril. Following are profiles of five software entrepreneurs, advising those who seek to follow in their footsteps with considerable candor, and relating their past triumphs and debacles.

Adam Osborne, John Walker, Gilman Louie and Philippe Kahn spoke last month at the 3rd Personal Computer Faire in a session entitled "Software Entrepreneurs: From Start-Ups To Upstarts," and their remarks are reprinted by permission of Computer Faire, Inc. David Winer of Living Videotext recently addressed a meeting of the Software Entrepreneurs' Forum in the Bay Area.

ADAM OSBORNE

(founder of Osborne & Associates book publishers, later Osborne/McGraw-Hill; founder of Osborne Computer; currently president and CEO of Paperback Software International)

Well, you know, really, I am just a nice, sweet, gentle guy. It's just that I always believe that if you're speaking in public, you need to tell it like it is, and even though we might have a little fun, I thought a lot of you people here are probably here because you are going to be up on the podium in a year or two, telling the rest of us how you started your company. So I thought I'd give you a few home truths, which involves telling it like it is.

Yes, you you have to have an ego that's towering. There's all the stuff that gets thrown at you. Even someone as big as Philippe, and his ego is bigger than he is. You need it, 'cause when enough people tell you "you're full of it," you've got to know that you're right, and they're wrong. You see, all of that stuff really is true. It probably takes more of an ego to be an entrepreneur than to be an actor. On the other hand, you probably have more chance of success as an entrepreneur than you do as an actor. That stuff is true.

The part that's totally not true is when they say that you hit adversity, and that you grow through it, and you're a better man for it. I'm not a better man for it. I didn't grow through it. I didn't want it to happen and I'd just as soon it doesn't happen again.

The truth involved in that is that there really is not much difference between the measures of success in entrepreneurship and anything else. There's only one thing that counts, and that's results. You make it, you're a hero. You don't make it, you screwed-up. That's it. How much money do you have in the bank?

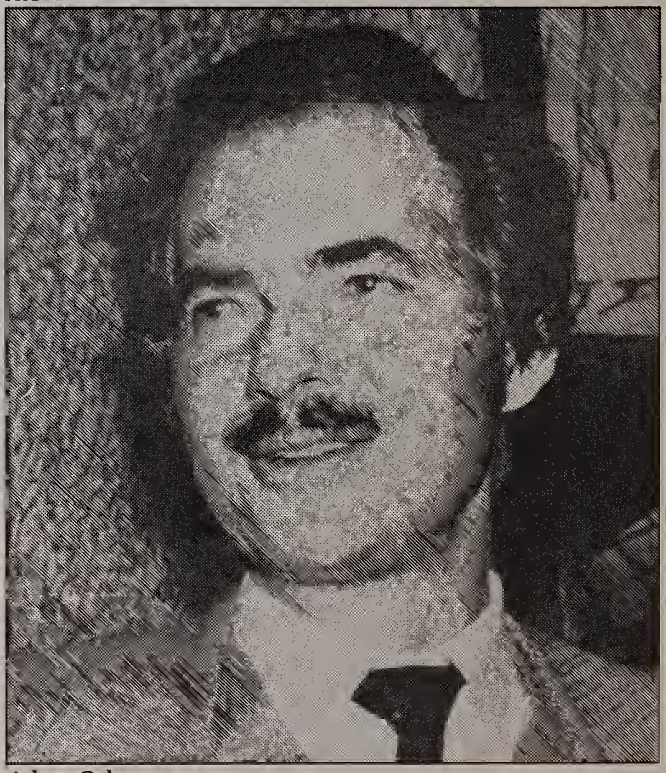
The press, in general, don't know what they're talking about, with a few exceptions. Until two weeks before Osborne Computer went bankrupt, every single information service and writer was saying it couldn't possibly happen. There was no way. Two weeks after it went bankrupt, they had all known for a year, and had been telling you so. Go back and look at the records. Really, there's no detailed analysis of anything going on, either why you did well, or not. You either did do well, or you didn't, and that's the end of it.

The next thing you better have is the skin of a rhinoceros, because you don't go and tell people that it really wasn't this way or that way. That's always a mistake. Whatever their perceptions are, they are, and that's the end of it. Which is the main reason why you'd better have a tough hide.

Now there are a few axioms that help. My favorite axiom is "He who smiles has just figured out who to blame for it." You see, a few things like that help, but in general, you've just got to know who you're dealing with, accept it the way it is, and don't try to change the rules of the game. If you're going to play the game, play by the rules that exist. If you're not doing very well at baseball, it doesn't help to go say "Change the rules." You just get out and play another game.

What are the people you're dealing with? Well, first of all, you've got to understand, don't get intimidated by anyone, ever. For example, venture capitalists are the offspring from a flock of sheep who once met a flock of lemmings. There are almost no venture capitalists I've ever met, who had the slightest understanding at the technical level of what they were investing in. There are very few. There are one or two who are outstanding, who really understand, deeply and clearly, what's happening. Very few. They set the pace, and everyone else follows blindly, managing huge sums of money with a level of ignorance that boggles the mind. So you go to them, and you try to explain to them what you're really doing, and try to get money on the merits of your project, and you're wasting your time. When everyone is

PHOTO: K. GYPSY ZABOROSKIE



Adam Osborne

"The part that's totally not true is when they say that you hit adversity, that you grow through it, and you're a better man for it. I'm not a better man for it, I didn't grow through it, I didn't want it to happen and I'd just as soon it doesn't happen again."

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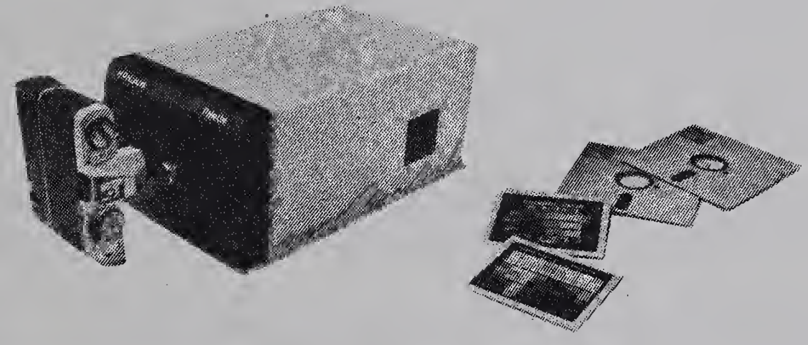

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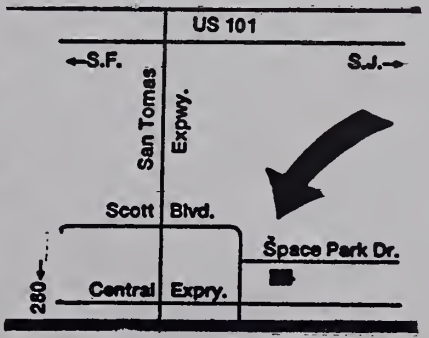


investing, they'll invest in you, because everyone is investing. When no one is investing, they won't invest in you, because no one else is investing. That's really all there is to it. You're much better off paying lip service to the form of the way in which they want to see things, unless you are getting an audience with one of the really few who really understand what they're doing, and believe me, they're scarce as hen's teeth. So that's the first thing.

The second thing to bear in mind, is that you do have to understand the market you're going into, and you do have to have something to offer. There are some fundamentals that you have to understand. If you don't really understand the market you're going into, if you really don't have something to bring to the table, you're not going to succeed just because you feel you're right. All the ego in the world, all the bravado in the world, and all the money in the world is not going to make you succeed with a product that doesn't have a place and an idea whose time hasn't come or never will come. There are some fundamentals you've clearly got to understand.

Beyond that, it's hard, hard work. But believe you me, it's enormous fun, and I wouldn't do it any other way.

JOHN WALKER

(co-founder of Marinchip Systems; president and founder of Autodesk, Inc.)

I think I'd just like to second a lot of what Adam just said about what it takes. I'm not sure about a towering ego, but I think that certainly the thick hide is very important. I remember a comment I heard, about a decade ago, about programmers, and I think it says something about why programmers do so well as entrepreneurs. Somebody said "To be a systems programmer on a big system, you have to have a thick skin." And the rejoinder was "It's not really that. It's just that your scales shouldn't peel very easily." If you meet that test, then you've got at least something it takes.

Basically, I got into this in the mid-'70s. I had been working on mainframe systems and time-sharing systems, and following what was happening in micros, and when I put together my first micro systems, I thought I really had something. It had 256 bytes of memory, and when I expanded it to 1K, well there was no limit to what could be done.

The goal, when I started my first company, Marinchip, was to deliver the kind of power to a user that one user on a time-sharing system had. That didn't happen until many years after that.

We started in February, 1977, and I was in the midst of an infatuation with UNIX and the Smalltalk environment, and figured that if we just had the right computer, not these silly things like the Z-80's and 8080's, like a real 16-bit computer, we could really do some of this kind of stuff.

So I picked the *obvious* leader, the TI-9900, put that on the S-100 Bus, coming up with the 16-bit standard for the S-100 Bus. In the process I had a great strategy and had investigated the market, and looked at the environment, and done all those things you're supposed to do, and figured that TI was really going to stomp out all these upstarts like Intel and Zilog, because they had hundreds of man-years of mini-computer software that ran on this chip. So they'd obviously just release that software and everything would fly, and we'd be right in the right position with the hardware.

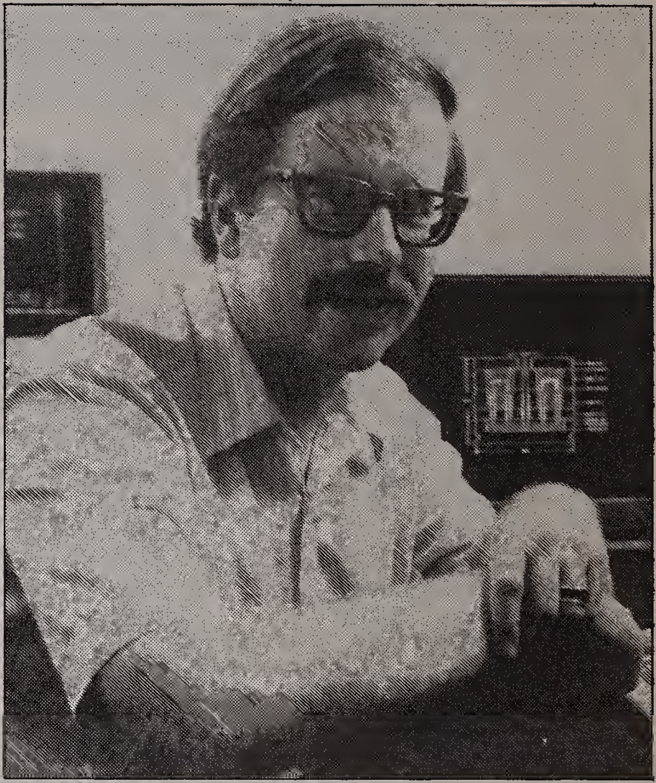
Well, that didn't happen, so we ended up writing about 300,000 lines of software that were all in TI assembly language. So, we had, in 1980, a Unix-like operating system, and multi-unit data bases, and all kinds of great hardware, and we sold about 650 systems.

The legacy of this is that Marinchip systems are used today to develop a lot of the software that flies in communication satellites, and have had *nothing* to do with all the ones that have been lost recently.

In late 1981, it became apparent to even me that there wasn't much hope for the 9900 family for the future. So, having had some years' experience in the hardware industry, I decided that software looked like a lot better business to get into. So I decided to start a software company. I rounded up sixteen people I'd known for a decade or more, and basically presented to them the following proposition: let's put together all of the money we can come up with, and start this company, and work for a year or more, without any pay, develop some products, and see what happens. So, we started the company April 29, 1982. We had sixteen founders, we had put in around $60,000 worth of capital, and our goal was to develop at least five products, test market them, and get behind whichever one was successful.

Now there's a reason for that. It takes about a year or so to take a software product to market. Not just to put it together, not just the product, but the documentation, the marketing plan, the promotion, everything it takes to have a real product, not just a piece of code. And, in a year, a lot can happen. The machine you are developing for may become obsolete, the market may change, some major player may enter with a competitive product, that you just can't possibly catch up with. So that was our goal, to diversify, to spread ourselves thin, and, hopefully, have one hit out of five. It's nice to be right at least twenty percent of the time, and still be successful.

Anyway, we started furiously putting together these products, and there were a lot of them. We had a thing that today would be called a Lisa-like or a Macintosh-like desk environment called *Autodesk*. We were going to do a true compiler for C-Basic, and pre-empt Digital Research with that. We had a text editor called *Autoscreen;* we had a neat idea, which was integration of a spreadsheet, with a linear program package. The name was *Opti-Calc* and I still haven't seen one of those. We had one of those little CAD systems, called *AUTOCAD.*



John Walker

"You have to be willing to work harder than many people can even imagine working. And that's why a lot of people fall by the wayside. You have to be willing to risk the very serious consequences of failure, and you have to believe in yourself, because when you start a company, a lot of your friends want you to fail."

So we were working on all of these products. Came along COMDEX of 1982, and we had to drive out at eight o'clock the next morning, and the company had told us if we could only do a couple of things to the package, we'd be able to show it in the Victor Booth. Everybody laughs at Victor today, but they had an enormous booth in 1982. They were really viewed as one of the leaders and we only had to do two things — support a piece of hardware we'd never seen until the

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day before, and make it run ten times faster.

So, the night before, in my house there were eight programmers, furiously programming away, working on the package. We worked until about five in the morning, then drove out three hours later to Las Vegas. We were in this little 10 × 10 booth, way out in the far reaches of the Convention Center, and the product was an immediate hit.

By the end of the show, in fact, we were running in six booths. A lot of that was luck. We had the right product at the right time, and what's more, we had a product, a computer-aided design and drafting package, that superbly demonstrated the differences between all of the IBM clones that were being introduced and the IBM-PC, so that hardware manufacturers looked at our product as a vehicle to promote their hardware. That was very important to us.

When we came back from that show, from the $60,000 that we'd started with, we had about $17,000 left in the bank. Now, we weren't paying anybody salary, so basically our expenses were what it took buying machines, going to shows and doing what was necessary. We had a couple of more months to run before we would run out of money at that rate, so we were very interested when computer manufacturers said, "We'll send you two machines, if you'll put your package on our machine."

When people started talking about joint advertising and promotion, we were all ears. So we were able to get machines, were able to put together joint advertising and promotion, without expending any cash, and a lot of that was because we had a package that was attractive to these people.

Right after we got back from the show, we decided we didn't have time for anything else but *AUTOCAD*, so we decided we didn't have time for anything else other than that. So that's about all we've done since. Since then, we have come up with about six major releases of the package. It runs on thirty-one machines, it supports eighty-six peripherals. We've integrated the LISP language into it. We have twenty-five people working fulltime on the package, and we're putting in excess of twenty man-years per year of development into the package. The package is about 170,000 lines of C, and that's one of the largest C programs every written. We really look at this package as an evolving and ongoing package. It's not a product that you finish, and in the CAD industry, that's a tradition. One of the mainframe CAD systems, CADAM, is now nineteen years old, and it's on release forty-five, or something like that, and people keep going on it.

I think the question everybody here has, is "Can it be done today?" I think the answer to that is a simple yes. Nothing really major has changed since 1982. The fundamentals are the same. You have to find a vacant market. You can't come in with no money, and try to steal marketshare from an established company that has a reputation and distribution, and all of the things that move product. You have to find a way to distribute and promote your product. You can't just throw the product out there and expect it to be an automatic success. We did that by having a product that sold hardware.

You have to be willing to work harder than many people can even imagine working. And that's why a lot of people fall by the wayside. You have to be willing to risk the very serious consequences of failure, and you have to believe in yourself, because when you start a company, a lot of your friends — and this is very painful to say — want you to fail. They won't say that to you, but the fact is they're not taking the risk, and if you succeed, they envy you, and they wish that they had taken that risk, so you don't get a lot of support. You have to believe in yourself. It helps to have sixteen people in the boat at the same time, the way we did, all taking the risk together, but basically, every single person has to believe that what they're doing is right, and that they're going to succeed. If they don't you'll always fail.

GILMAN LOUIE

(president and co-founder, Nexa Corporation, a San Francisco-based software developer)

The trick for success is finding something that you love to do. What I mean by loving to do something, is when you're about nine years old, and you have a bunch of masking tape, and a bunch of cardboard index cards, and you paste together this make-believe computer, and everybody around you says, "That kid's a little strange." On top of that, you have all of your friends walking around all day figuring out new ways to build 1K computers. It makes life sort of interesting, and it makes life sort of tough.

In our case, we got started by having a bunch of people at a certain time in this country when jobs were very hard to find. People coming out of college were getting boxes of rejection notices with their resumes stamped "reject," and people telling them "You're not good for *anything*." You get a group of people like that together, and they get mad. They get mad because everybody around them is telling them that they spent six years in college just so they can stand on the unemployment line. So what we offered them was to come and work for free in the company and give up your unemployment checks, and work for a year, and see what would happen. That's exactly what we did.

When we were going to school (this is my fraternity brothers and I) we decided that we were going to go into business because we knew the tricks for success. We read how to dress for success, we were told "You've got to manage by objectives — Theory X, Theory Y, Theory Z — and we went through all the management courses. It was great. It was going to be a breeze. So we came up with a ten-point formula how to be successful in business. The ten-point formula was what shoes to buy, what ties to wear, getting nice business cards, and telling all your friends you're going to make a lot of money.

PHOTO: PAT JOHNSON STUDIOS

Gilman Louie

"We wanted to take our risks while we were young. The most they could repossess from me was my HP calculator."

Just like John Walker has said, when you start off in the business, I hate to say that a lot of your friends are hoping for failure, those who are not in your boat. They don't want you to succeed, 'cause they went off and worked at a job that's making $30,000 per year, and they think life is hunky-dory. For a lot of people that's fine. There's nothing wrong with that. But we knew we wanted something more out of life.

We wanted to take our risks while we were young. The most they could repossess from me was my HP calculator. We wanted to take our chances before we had any families, so we didn't have to worry about feeding anybody, and we could generally be irresponsible and not have to answer

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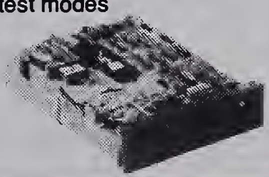

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So we set up this house, which was my parent's house, and we moved my parents into a little corner of the house and surrounded them with boxes. We take over the kitchen, the bedrooms, the dining room, and the basement, and we shoved forty computers in there with ten programmers. Now this is a little strange. The little kids outside in my neighborhood — we work out of a residential area — thought it was a little strange, because they saw the same people coming in and out of this house at three o'clock in the morning for about four months, working on a project. And you could kind of see they're getting kind of scrungy and looking rather disgusting.

Well, that's what it takes to run a business. That's the secret. The secret is going out, and not being afraid of what people will tell you. Everybody thinks that the way to run a business is to go out and get V.C. — Vulture Capital. Unlike a bank which asks you for collateral in terms of property, the V.C. asks for collateral in terms of your soul and your life. They want you for five years, and if you want to go out that road, that's fine, but you're in for a lot of pain and agony. So we decided to do it on our own, and that means having to go out and work and raise capital by what we produce, and that's exactly what we did.

We have redefined our ten stages of growth. The first stage is excitement. Everybody wants to make you successful, everybody wants to be successful. You have a great new company, and a great new idea, and you're going to make $300 million in the second year. Stage two is when you find out that you actually have to do *work*. By that time, everyone is beginning to wonder what's going on. Stage three is when the other employees, the people that are working with you, find out that there is work. Then they all want to leave. Stage four is bringing yourself back down to earth and establishing a realistic business plan. The fifth stage is a real tough stage, and that's the "shakeout stage." That's when you shake out the people who thought they wanted to do it because the money was there, and those who wanted to do it because they love what they're doing. And that means they have to share in the same vision that you do.

"Everybody thinks that the way to run a business is to go out and get V.C. — Vulture Capital."

Now a lot of entrepreneurs feel that it's great to have a culture. They all talk about culture and sharing this culture, but they're not willing to share the business. They're not willing to give up a certain percentage of their business to the employees. They give a lot of lip service to sharing, but when the company turns from a non-profit organization to a profit organization, everybody says, "Oh well, we don't need you. We'll go out and hire new programmers." The first thing we did was protect our interests by giving stock out to our employees. We gave out ten percent to two key employees and twenty-five percent to all the rest of the people who were in the wagon.

The sixth stage is realizing that your perception of the industry is not the same as those people in the industry. And that's very good, because if you were having the same view that everyone else is having, and you're developing the same types of products everybody else is having, and they have $4 million to spend on an advertising budget, and you have $40,000, you're in trouble. So don't be afraid to do something different. Go out and take that chance. The biggest problem today in this industry is that everybody's taking the safe road, doing things that are safe and will please the V.C., but that's not how the industry got started. It got started by people like these here, taking the chances and taking risks. Giving up their house, and giving up their lives, and not being afraid to fall flat on their faces and then come back afterwards. The next phase, the seventh stage, is finding companies that share the same vision that you do, and work together. Then establishing a record, a good working record, and having people out there say, "Hey, they write real good software," and you establish a track. The last stage, which we haven't reached yet, is the stage of making money. Hopefully, I can learn something today, and they can show me the way to make lots of money. If not,I'm going to have to sell my forty computers and trade in my trademarks for some royalties, but that's not what we're in business for.

We decided to go into software development, rather than software publishing, because software developers fall softer. Hardware companies fall the hardest, as Osborne knows, and that's why he went to Paperback Software. It's a nice softer fall.

At the same time, don't discount luck. A lot of business is luck, and it's just building the opportunities and trying to be at the right place at the right time. Most of our business deals are landed because of an accident.

Our major clients — the first ones we had were the Japanese in Japan. Microsoft-ASCII came to a West Coast Computer Faire. We had this little micro booth, a 6 × 6 lot on the corner, which we extended out to two feet on each end, so we kind of got an 8 × 8 booth. We built it all the way up to the ceiling. What happened was this Japanese man walks up to us, and it just so happens that everyone who wasn't Asian, which was like half the company, decided to go to lunch at one time. So here's this big booth in this 6 × 6 slot, filled with these Asian employees, and they said "Great! This must be another Japanese company, and we can do lots of business with them!" So they came up and he took lots of pictures with the camera, and he gave us the card, and we took it back, and the next thing we know, there was this doorbell ringing.

And there were these four Japanese vice-presidents from the largest Japanese software house in Japan, visiting our house, with the little kids running around out in the street. Now they come in and we're real scared, because my mom is there, and she's going "What's going on here? Do you want a cup of coffee?" and she introduces us as "her kids," and they're looking real strange at us, like "Why did we fly in from Tokyo to meet these guys here?" Everybody's speaking Japanese, and nobody in our company knows Japanese, 'cause we don't *have* any Japanese working for us.

"At that time, the Japanese guy kind of chuckled, and he looks at us, and he says, 'Look, we started out in a room about half the size of this kitchen, and we like companies like you, because you're *cheap*.'"

Now they got this translator working for them, which happened to later on be one of the vice-presidents who disguises himself as a translator, and everybody else pretends that they can't speak English. So they're watching, and seeing what's going on. My mom is serving them cups of coffee. They're saying "We'd like to do more business with you." My mom got real upset and she's saying, "Well, I'd better be quite honest with these people, otherwise my son is going to get in a lot of trouble for making promises he can't carry out." She tells the Japanese that "Look, this is all there is to it, right?" and "These kids running around, they really don't know what they're doing. They're just out of college, and they think they know, and they have all the answers in the world, because they got their M.B.A.'s."

Now at that time, the Japanese guy kind of chuckled, and he looks at us, and he says, "Look, we started out in a room about half the size of this kitchen, and we like companies like you, because you're *cheap*."

Ever since then we wrote out a little agreement on a napkin, and we have had a long-term relationship. They have provided us with the vehicle to be successful, and come back to the United States, because all of our software was just being exported to Japan, going the other way for once, and now we have product that we can

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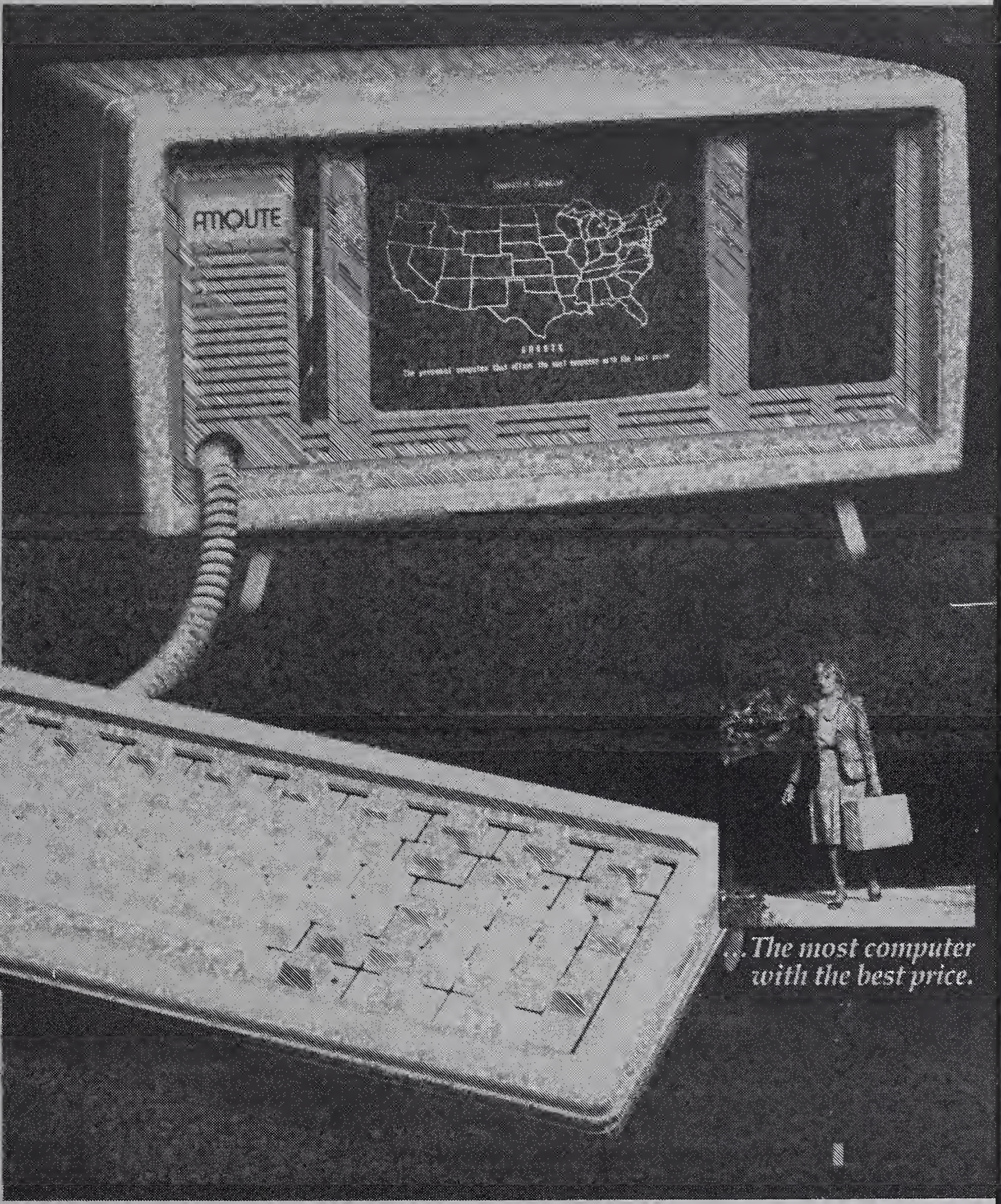

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As far as success is concerned, I don't know. We haven't reached it yet, but we're working hard, and right now I still have ten programmers, on a Saturday they're working for a deadline for a man standing in the back, who works at Activision, that's going to wring my neck if I don't finish the project. It's making your commitments, making your deadlines, finding your people, finding your culture, and going out and being a success. Be a success in your own mind first, and don't worry about what other people have to say around you. In that way, the other sorts of success, the monetary success and the publicity and your ego will follow along and follow suit.

PHILIPPE KAHN

(president and founder, Borland International)

I'd like to comment on my colleagues' stuff. I liked Gilman's presentation. I think it was a great presentation. There's one thing I picked up there that didn't work out for me. It's that the great thing is success with things you like to do. I wasn't very successful at that. I had to do something else. I tried very hard when I was sixteen, and it was okay, but . . .

The second thing was Adam talking about the rules of the game, and I think that that's not really the problem. I think the problem is to know how to play the game of the rules, which is a different way to look at things.

Seriously speaking, we essentially have here software people, I guess, who are all involved with software after having been involved with other things. John was involved with hardware. I was also involved with hardware. Not that same type of hardware, but with kind of a process control machine tools, high-speed, big computers, big systems, serious stuff, but not microcomputers.

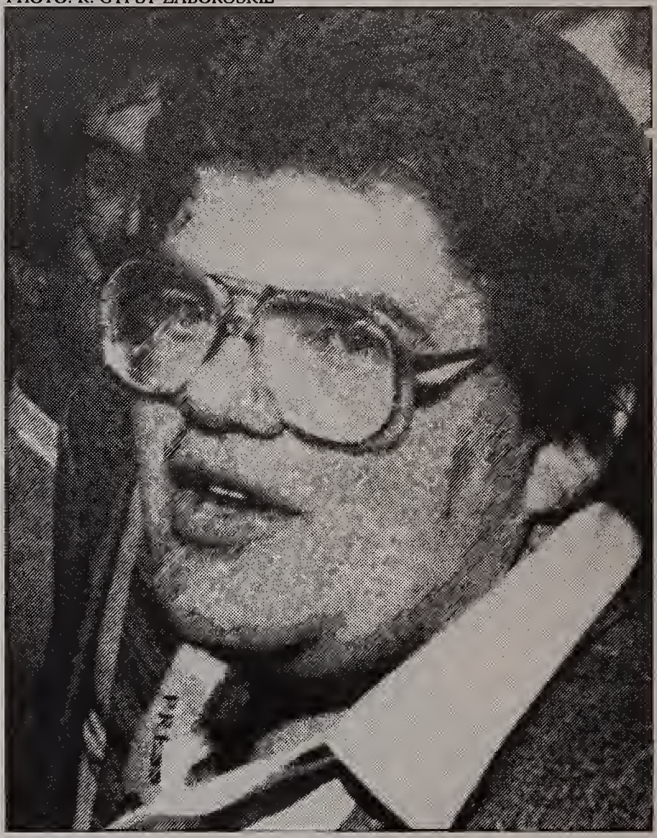
I came here because it's always the same story. If you're going to do something to make money, it's totally stupid, to do something to make money. I mean, if you want to make money, build a machine that makes bills. It's much easier. So essentially, I was kind of interested. I bought an Apple II. I used to teach mathematics as an assistant at the University, and I was intrigued by microcomputers, because everybody got tired of FORTRAN, and all that stuff. I bought an Apple II that day, because in France, you know, people teaching like that don't make a lot of money, and in order to make some money, I used to write software on the Apple II, for this guy who wanted an accounting package. This guy suddenly needed a program that would do a table of index, and contents for documents, and stuff like that, and I got in touch with U.C.S.D.-Pascal, and good things like all of that, and got fascinated with the fact that you had something called personal computers.

I think that everybody here is interested in the world of personal computers because they're personal. There is some personal relationship to the computer, which is very different from the relationship you get when you're working with a large machine. Because of this fascination, and because when I was reading all of the ads in *Byte* all of the time, I was seeing that everybody was located in the San Francisco Bay Area. I had the chance, with the previous company that I was working for, to come to HP, because I installed a manufacturing system for them, and I wanted to move here. But I didn't really want to start a company or anything like that. So I took the money I had left, which was about $5,000, and decided, okay, let's move. So, I moved. I had sent out about one hundred telexes to U.S. companies. I had found the telex numbers in *Byte* Magazine, and I said, "I'm coming — I want a job." You have to be pretty naive to think you might succeed.

I got about ten answers. I got interviews. I got one interview at HP, for example, because I was more interested in the R&D part, and I spent three days interviewing at HP Labs, for the new line of minicomputers they were going to bring out. That was in the summer of '82. Since then the project has been scrapped. However, I thought I had the job. We were going to work on the operating system of the machine. They needed a mathematician. Strangely enough, at HP Labs, they had all sorts of people, but no one really knew queueing theory and all those things in depth. So, they really needed a guy like that, and I qualified pretty much, so I thought I got the job until I got to the guy in personnel, who gave me a stack like that of documents, with pension plans, and my English was a little more French than it is today. At the end of the interview, the guy tells me "Well, you're a citizen," and I say, "No." He says, "Ah-ha, you've got a green card," and I said "No," so he says "Well, this is a problem." I say "Yes?" I should have said no, but I said yes, so he says "Well, this is a problem." So they decided to go with another guy out of the three that had interviewed. I thought I had won the contest, but they were putting in the scale the fact that I was "illegal" at the time and it wasn't worth it. I got a few consulting jobs, and my money was running out, because I couldn't find a real interesting job; something I could live for. I was interested in building things, in trying to get involved with people, and making things happen and make a decent living at it. I even did some programming for Adam Osborne's company. I wrote *FrontEnd* for the Vixen, and I never got paid for it.

Essentially, it was very interesting, because I had to borrow ten bucks to get some gas, from the guy who was Vice President of Operations for the company, because we were sharing an office in a small computer store in San Jose, and I had to borrow ten bucks to pay for the gas to go to Osborne at Hayward, and borrow a car, because I couldn't do anything else to do a presentation to Bob Moody (at Osborne's), wait for four

PHOTO: K. GYPSY ZABOROSKIE



Philippe Kahn

"At the end of the interview, the guy tells me, 'Well, you're a citizen,' and I say, 'No.' He says, 'A-ha, you've got a green card,' and I say, 'No.' He says, 'Well, this is a problem,' and I say 'Yes?' I should have said no."

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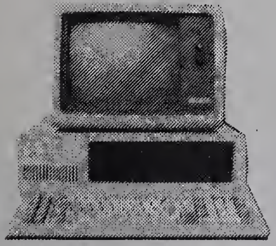

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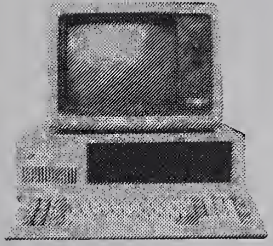

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3797 YALE WAY • FREMONT, CA 94538 • PHONE: (415) 490–7788 • TELEX: 5101009766 SUPREME TECH hours in the lobby, because he didn't have time to see me. Of course, he never had time to pay my bills.

But things went like that, and suddenly the development of *TurboPascal* was going along. *TurboPascal* was never meant as a stand-alone product. Because the problem was, what I always knew how to do, and what we always knew how to do was writing programs in Pascal. When the PC came up, trying to transport the software between a CP/M 80 machine, which had a decent Pascal compiler, and the IBM-PC was virtually impossible because the quality of Pascal compilers on the IBM-PC was really dreadful. This is how the idea of *TurboPascal* happened. It was never meant to be sold as such.

Suddenly people started playing, saying, "Give me a copy." Here or there, people said "This is a great product. You could sell it." I said, "Well, come on." So we built a business plan and I really tried to get venture capital, because people told me "That's how you have to do it. You have to hire management. You have to hire marketing. You have to get venture capital"—and I've waited in a lot of lobbies.

A lot of people read the business plan and tossed it away. I don't blame them, because what do we have to offer? It was a totally crazy idea, selling a Pascal compiler for 50 bucks, you can't make money doing it. One venture capitalist asked for market research. There were all sorts of things that could happen, and one venture capitalist commissioned *Future Computing*. *Future Computing* said "Well, if they have a Pascal compiler for the IBM-PC, they will probably maximally sell 20,000 copies in five years." Well, the guy says "This doesn't make sense." We sold over 400,000 copies in less than two years. However, there was no way to know that.

"People are asking for advice. One advice I would really like to give is that whoever trusts a programmer for a deadline, deserves what's going to happen to him."

I have two minutes left, so here's the rest of the story in two minutes. Essentially, we tried to show the project to Microsoft, to Digital Research, to everybody. We tried to sell it for $50,000, so at that time anybody could have bought the full rights to *TurboPascal* at that cost. I was totally broke, didn't know what to do. We just needed money to pay for a little room in San Jose on Stevens Creek Boulevard between two car dealers. So anyway, the last resort was, I borrowed $20,000 from my dad. It was his last money too, and I said, "I've got this great product, and I'm convinced we can sell it to hackers."

We got an ad into *Byte Magazine*, which we designed ourselves, and in the first month we generated $150,000 worth of sales, and there was the office on top of a garage, and we couldn't believe it. This duplicator here, who stands in this room, also wouldn't give us good prices. He said "Ah, you will never sell as many Pascal compilers as you say you will." Anyway, things run that way.

People are asking for advice, so one advice I would really like to give is to the guy who's waiting for Gilman's product, who is on a deadline, and who is in the back of the room. It is that whoever trusts a programmer for a deadline, deserves what's going to happen to him.

DAVID WINER

(president of Living Videotext, publishers of ThinkTank*)*

At the start, the concept of an outline processor was merely Winer's idea of a product everyone needed. The trouble was, everyone didn't *know* they needed it, and Winer didn't know how to go about convincing them. In fact, he wasn't even sure himself what they would use it for.

Winer describes the origins of *ThinkTank* as an evolutionary process. As a graduate student in computer science at the University of Wisconsin in 1979, he originally envisioned it as a tool for programmers, since the structures programmers work with are not very well supported by their tools. For example, even though programs are built up from clearly-defined structures, a text editor doesn't "understand" those structures. So the first incarnation of what would one day become *ThinkTank* was a Pascal precompiler. Pascal compilers don't "care" how a user types his program, but another human best understands that program when it is formatted in a certain structure that shows at a glance how program elements relate to each other. As the user typed a program, Winer's precompiler extracted the structure program itself and stored it in a format very similar to the way *ThinkTank* organizes text today.

He showed the product to others in the computer science department, whose reactions were, "What do I need one of these things for?" and "I can do one of those in two nights."

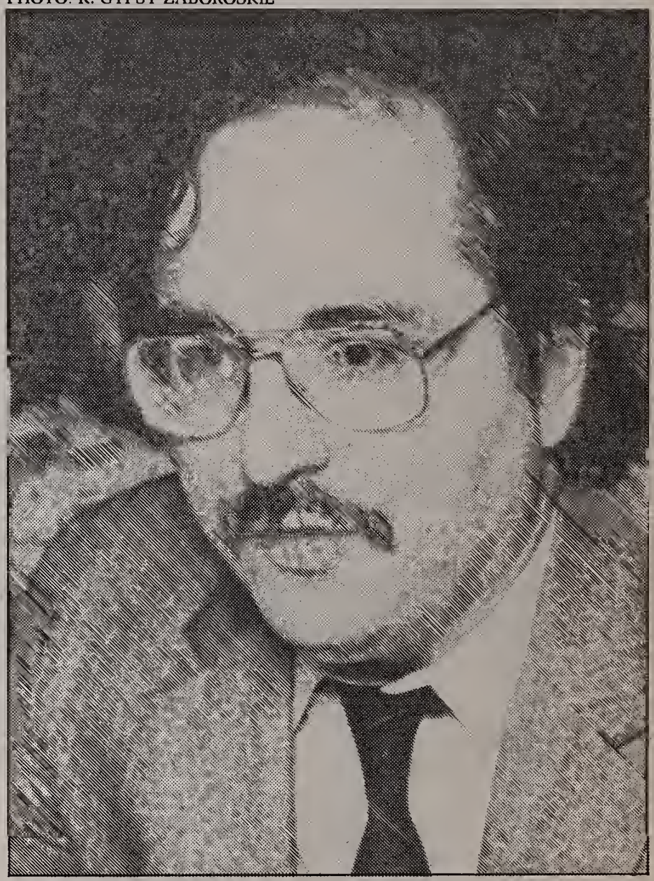
Had he not happened to show the product to friends in the English department, he might have given up right there. "For me at the time, programmers made up almost the entire universe, aside from a few people I knew in the English department," he recalls. "The English department people wanted to use the damn thing. I thought, this doesn't make any sense. This isn't for English people to use. They don't know an 'IF ... THEN ... ELSE' from Shakespeare."

Their puzzling reaction propelled him in a different direction. He realized that he had developed something not quite on target—those he had intended it for weren't interested, but others were.

He then returned to his living room "lab" and decided to hedge his bets by writing two pieces of software. One was a database management system, and the other what he had begun to call an "outline processor," removing everything relating to Pascal syntax.

Since Madison, Wisconsin, didn't seem the place to make it big in the software industry, he moved to California, "because California was like Nashville. It's where programmers come to make their billion dollars. Where was I going? I was coming out to see Apple, because that's where the billions of dollars were." He was able to arrange a meeting with Steve Jobs and John Couch, a software manager, who said, "We really like the database, but we don't understand what this outline processor thing is, and we don't think there's any market for it."

PHOTO: K. GYPSY ZABOROSKIE



David Winer

Winer soon learned how the retailer's mind works: when 20 people come in and ask for the product, *then* the retailer might stock it.

Winer retorted, "You don't understand. This is the thing that's going to sell all your computers." Good words, perhaps, for 1985, but not 1979. Computers needed no help; they were practically selling themselves at the time. People bought Apples just for BASIC. Jobs and Couch were willing to market the database, but not the outline processor. Winer

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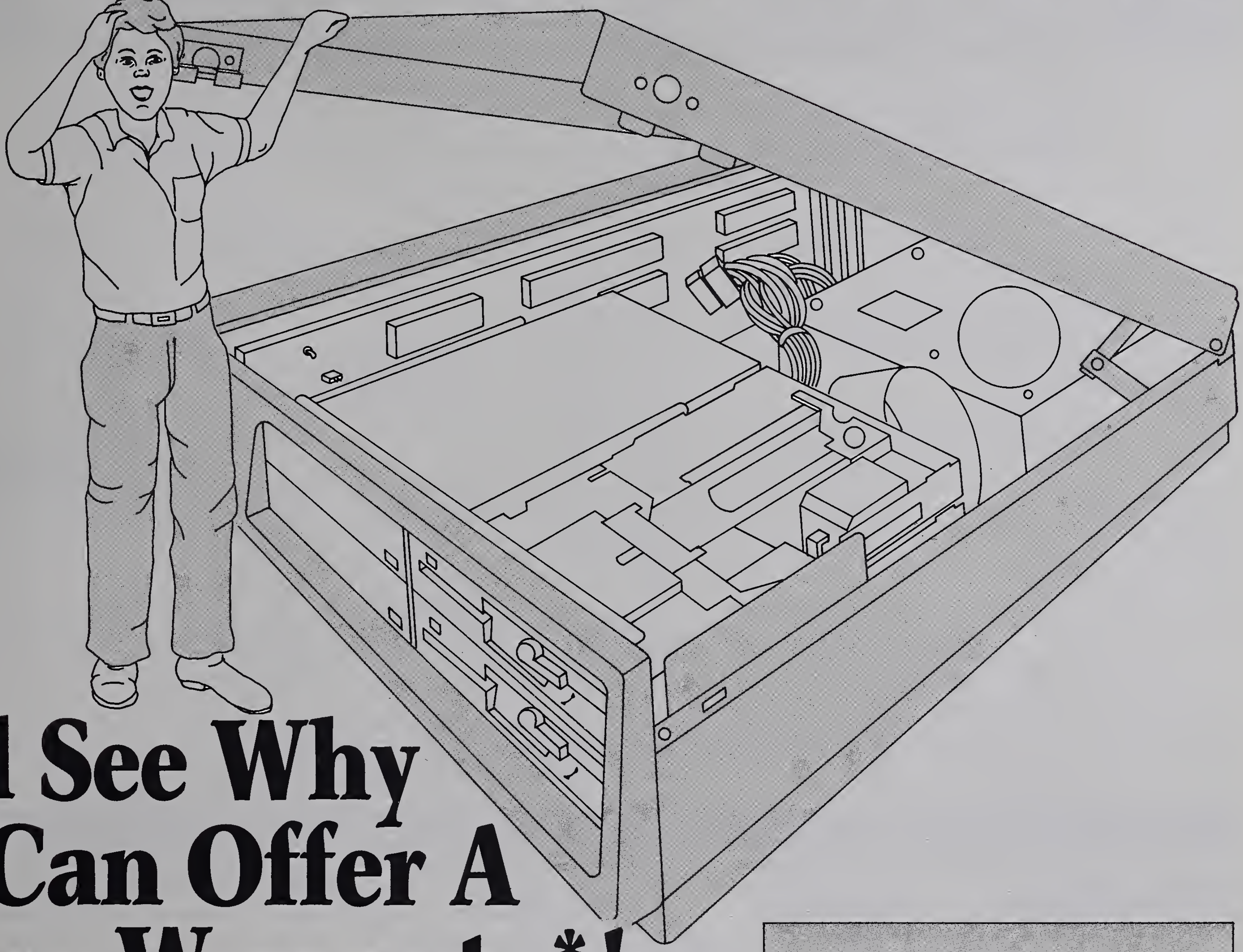

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*all parts & labor provided at manufacturers location was insistent: "You can't separate the two; they belong together," he recalls saying. "This was the billion-dollar mind ticking. I could've had a nice salary and stock options. I told them no, if you can believe that. I then asked if they had any ideas on where to go to sell my outline processor."

Jobs and Couch suggested that he try some people who were working on something they called *VisiCalc*. Winer called developer Dan Fylstra, saying that he had something he called an outline processor. Might they be interested? Amazingly enough, Fylstra told him that they just happened to be looking for such a thing.

When he saw what was to become *VisiCalc*, Winer was entranced, feeling that his product paled beside it. He immediately decided that this was a company he wanted to be connected with, and signed a contract. Unfortunately, his outline processor was never published by the company, although it had been planned as the big follow-on to *VisiCalc*, with the tentative name of *VisiText*. The company changed, though, as all companies do when they grow too fast. They decided they would rather try to take a piece of *WordStar*'s market than start a new market of their own.

After two years, Winer left and moved to a small office on San Antonio Avenue in Palo Alto, where he started his own company, Living Videotext, which then consisted of two people. There they devised a new strategy to sell their product, which had by then been named *ThinkTank*. Having no money in the bank, they couldn't advertise, so they decided to take the product to local retailers, who would, they fondly hoped, immediately become turned on by it. They would teach the retailers how to sell an outline processor, which would sell a lot of software, and Living Videotext would make a lot of money. They would take it to a few more retailers, and make more money, "and before too long we'd be as rich as Mitch Kapor," laughs Winer.

Nice idea, but that, too, turned out to be something he could warn members of SEF about. Within two weeks they learned how the retailer's mind works: when 20 people come in and ask for the product, *then* he might stock it. So now Winer had to learn how to get customers to come in and ask for his product. He checked out advertisements in computer magazines, and found to his horror that the cost was much more than the budget would permit.

The only hope seemed to be press coverage, so he took *ThinkTank* to *InfoWorld*, which showed little interest. Likewise the many other computer magazines they tried. Winer had been reading the *New York Times*' computer column by Erik Sandbert-Diment, whose attitude seemed to indicate he might like *ThinkTank* and perhaps write something favorable about it. He called the writer, saying, "I want to send you this great new product . . .," at which point he heard a loud click. Winer called back. "You've really got to take a look at this product, *don't hang up*." The writer didn't, and reluctantly agreed to let Winer send a copy. Winer called back two weeks later, asking if the columnist had looked at *ThinkTank*, which he had not. Winer replied, "Well, okay, I'm going to keep sending you copies of the product and calling you until you've looked at it." That eventually did work. Winer had a strong feeling that if the columnist tried *ThinkTank*, he would like it; he advises others to approach someone they think might be a sympathetic reporter, someone who might like their product, and then not to give up, because eventually Sandbert-Diment did write a column about *ThinkTank*.

At this point, Winer says, there entered a very important element of success, namely *luck*. He recalls, "With no money in the bank, no budget to do our press, the review came out right in the middle of the National Computer Conference in Anaheim. This was a stroke of luck for us, because here in one city were the editors of every major computer magazine. We had in our hands that *New York Times* review, which meant, to us, credibility. These guys wouldn't respect the product on its own merits. They wouldn't look at the product in terms of what it could do, or how it was different from a word processor, or how people would use it. They would look at it, though, if you gave them a little piece of instant credibility. So we were walking around the aisles, and to the same editors we'd been handing copies of brochures and demo disks, we handed copies of the review from the *New York Times*.

"As we were walking away down the aisles," he continues, "we'd look over our shoulders from 20 feet, and the guy was still reading the review. If you've ever tried to hand an editor a piece of your literature, you know it goes into an inside or back pocket. So that summer we got a tremendous amount of press. That tells you that there's a great amount of free publicity out there, and in a full market, that's the key ingredient to making a product sell. So you don't need a big advertising budget; you need to keep your head up and keep believing in what you're doing. It works. There is somebody you can push on to get your product sold."

The rest, as they say, was history.

Winer explains that venture capital is not necessarily the magic answer for a small developer. Living Videotext has no venture capital, because just having money does not bring in customers. He cites an unnamed company that spent a million dollars in 1985 training retailers, but very little on advertising, or anything else to bring in the customers. This strategy produced the interesting situation of hundreds of very well-trained dealers ready to sell product to customers, and no customers walking in the door to look at the product. Winer feels that most venture capitalists don't even understand how the market works. In fact, a developer with a vision of how to market his product might very well interfere with the venture capitalist's ideas.

Winer also feels that developers should not just be in the business to make a quick million and get out. They must enjoy what they're doing while struggling to get the company started, because they won't find the time to enjoy the success once they get there. The 80-hour weeks never stop. Keeping the company going remains a full-time job.

He warns those planning to start a software company to be very aware of how uncertain these times are, and to have impeccable timing.

Winer also feels that it's imperative for software products to be developed by companies whose executives use computers. He points to the remarkable lack of success book publishers and movie companies have had in the software field. On the other hand, the enormously successful *dBase* was a database product originally developed to do football pools, but *by a computer user for computer* users, a fact that contributed to its usefulness in various applications. Other successful products originally designed by people who use computers include CP/M, *Lotus 1-2-3*, *MacPaint*, *Reflex*, and *WordStar*.

When Winer decided to publish *ThinkTank*, he also had another communications-based product. *ThinkTank* was first, because telecommunications wasn't a big market at the time. But sometime soon, he says, "we will do videotext; in fact, we think we are doing videotext right now with *ThinkTank*, in the sense of laying the foundation for communications with computers. And when I say 'communications,' I mean both with a little 'c' and a big 'C.' What I mean by that is, a little 'c' is the wires that go between computers, like terminal software, technology. Big 'C' is, I'm talking to you, that's communicating. Right now we sell software for big 'C.' Eventually we'll sell software that does big 'C' and little 'c,' and does it nicely."

Winer says that Living Videotext is indeed a development company, continuing to work on new products. They are also, however, a marketing company, he says, because if someone came to them with the right product, another *ThinkTank*, perhaps, they would certainly market it.

— *Michael Wiesenberg*

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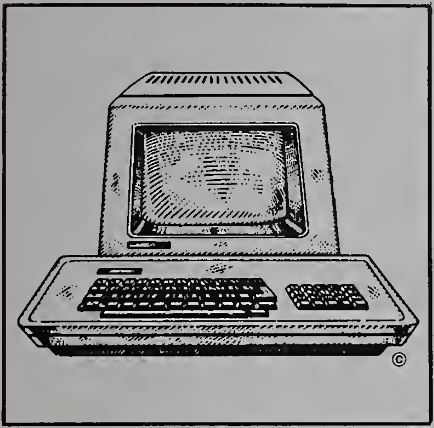

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			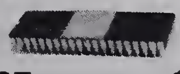		
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SOFTWARE ENTREPRENEURS
'85

Improving The Odds For Small Developers:

The Software Entrepreneurs' Forum

By Michael Wiesenberg

A group of software entrepreneurs based in Palo Alto feels that the best way to learn how to take your software product from development to the marketplace is to listen to the experiences of those who have already gone through the process, thus avoiding the costly process of making all the mistakes yourself.

The Software Entrepreneurs' Forum began in October, 1983. The group has now grown from the original 14 founders to over 200 members, mostly people trying to make it on their own in the software product industry without backing from large companies. Individual members are software developers, investment capitalists, lawyers, graphic artists, and people in marketing, marketing research, distribution, packaging and documentation. They are mostly in small companies or in business for themselves. Their combined talents comprise all the disciplines needed to get software developed and on the market. In monthly meetings of the whole group, in smaller special-interest groups (SIGs), and in one-time seminars and workshops, they try to learn from each other how to make the right decisions, and, even more important, what *not* to do. Members also often form business relationships, and use each other's talents on a contractual or percentage basis.

To make the theory of learning-by - listening - to - those - that - have - done work, each monthly meeting features a talk by an industry leader or a panel of experts. Speakers have included Philippe Kahn, President of Borland International, Ira Weiss, Chief Executive Officer of 800-SOFTWARE, Fred Gibbons, President of Software Publishing, and David Winer, President of Living Videotext — all entrepreneurs who started small and made it big.

The idea for the Software Entrepreneurs' Forum came out of a seminar called "Marketing in the 80s," held in July, 1983 by the Professional and Technical Consultants Association (PATCA). About 100 people attended to hear a panel of eight software developers and investors in the field speak on different aspects of development and marketing. Twenty of the attendees met again, and realized that success in the software products field takes more than expert programming skills. Good documentation is as important to the success of a product as its execution speed and universality. Equally important are packaging, market research, actual marketing, financing, and legal advice. All these disciplines and more are needed to be successful, but smaller companies don't have these types of resources. While large companies like MicroPro and Digital Research already have all these skills inhouse, how could small companies, some with as few as one or two employees, gain these skills? A company might need 20 or 30 people or more, each having a different specialty, to get a product out into the marketplace. With just a few employees, the small companies needed to know precisely what, and what not, to do.

If you are at all involved in the software industry, and you do not own or work for a large software company, SEF may help you make it big in ways you could not do yourself.

The founding group began meeting weekly in August and quickly realized they had to learn more and that they needed a place to make contacts with people in other disciplines. They agreed to form an organization specifically for themselves — people in the software product industry, small companies. They would create an atmosphere in which they could make contacts, find the right people they could get along with and perhaps form business relationships.

The founding members of the Software Entrepreneurs' Forum held an organizational meeting on October 11, 1983, at which they elected the first board of directors. The first meeting for the general public was held October 17, 1983, at San Jose State University, and about 80 people showed up to hear Richard Dalton,

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editor of *The Whole Earth Software Catalog*, speak about what's wrong with the software industry.

The organization has since grown to over 200, with new members being added each month. While most members are in the Bay Area, there are also members outside the service area, including other parts of California and even other parts of the country. Regular meetings are held the third Thursday of each month at Harry's Hofbrau at the Palo Alto Airport-Golf Course Complex (at 1875 Embarcadero, about a mile east of the Bayshore Freeway). Each meeting starts at 6:30 with a no-host bar, followed by dinner at 7, and the speaker or panel at 7:45. About 80 usually attend the monthly full-membership meeting.

SEF also has several special-interest groups, including an IBM-PC SIG, a Macintosh SIG that itself is further divided into seven SIGs, a marketing SIG, a mainframe SIG (for those interested in developing software for transferring data between personal computers and mainframes), a newly-formed engineering software SIG, an educational software SIG, and one for Digital Equipment Corporation computers. The SIGs meet regularly, usually once or twice a month, and provide an intensive atmosphere for dissemination of information and an opportunity for developers to make contacts with others working in similar directions.

SEF also sponsors workshops and seminars. A workshop on legal protection for software was hosted by Dan Remer, author of *Legal Care for Your Software*, and Rob Dunaway, of the law firm Remer, Remer, and Dunaway. A Macintosh seminar, held in June, 1984, was perhaps SEF's most successful, offering hints on how to develop for this promising machine. A seminar is planned for developers on Commodore's hot new Amiga computer.

SEF has also become politically involved. Board member Michael Odawa, head of Simple Software of Mill Valley, is in charge of the Legislative Committee, which monitors legislation that affects the software industry. In August, Odawa went to Sacramento to lobby against the Molina bill, A.B. 1507, a restrictive bill that would have forced software developers to warranty their products for six months, and take them back if, at any time within that period, any sales representative or advertiser made any unsubstantiated claim about the product.

The bill apparently stemmed from an experience Assembly Member Gloria Molina had when purchasing a computer system for a specific task she needed, mail merge. She bought an Apple Lisa system from a dealer who assured her it had the capabilities she needed. After purchase, however, she found that the software did not exist to do mail merge on a Lisa, nor would Apple be developing it, as they were phasing out the Lisa. The dealer refused to buy back her machine and software. On further investigation, Ms. Molina found there were others in the same boat, who had bought computer equipment under the mistaken impression that it would do something a dealer or advertisement had assured them it could. In response, she introduced A.B. 1507.

Past Speakers At SEF

From the start, SEF has attracted an impressive group of speakers.

- Bill Baker (founder of Information Unlimited Software, which publishes the *IBM PC Easy* family of software), developed the theme of the synergy of shared perspectives on the needs and potential of the software industry.
- A panel including Jo-L Hendrickson (CEO of Individual Software, Inc.), Peter Sinclair (Director of Product Acquisition for Software Publishing Corporation), Ed Bless (Quality Control Manager for Apple Computer), Alice Bryant (Director of Marketing and Sales Support for SKU), and Mark Burch (Applications Manager for Independent Software Development for Hewlett-Packard's TouchScreen Computer), discussed marketing, publishing, and distributing.
- Educational software was discussed by a panel consisting of Dr. Dorothy Deringer (Vice-President of the Atari Learning Systems Group), Marla Altschuler (Assistant West Coast Manager for Scholastic, Inc.'s software sales), and Mrs. Bobby Goodson (Education Specialist in the Cupertino School District).
- Gary Carlston, cofounder and vice president of Brøderbund Software, discussed vanity publishing (attempting to publish and market your software yourself).
- Generating effective press coverage for software products was the subject of a panel including Fred Hoar (Vice-President of Corporate Communications at Gavilan Computers), Evelyn Richards (Technology Editor of *The San Jose Mercury News*), Stewart Alsop II, (then Editor of *InfoWorld*), and Frank Weikel (Director of Corporate Communications of Eagle Computers). By sending direct mailouts to several public relations firms in the Valley, SEF generated its first sold-out, standing-room-only meeting for this panel.
- John Dvorak, gadfly columnist for *InfoWorld* and *The San Francisco Examiner*, coauthor of *Hypergrowth*, the story of the rise and fall of Osborne Computer, and host of two radio programs — devoted to computers, spoke on "The Corporation of the Future." He also talked about dealer failure in his well-received talk, and generated many inquiries about SEF by writing it up in his "Inside Track" column in *InfoWorld*.
- Representatives of the retail industry — Al "Tex" Thoman (proprietor of Friendly Software in San Carlos), Sue Thomas (District Coordinator for Computer Craft's Learning Centers in California and Nevada), and Paul Schuman (Software Product Manager for Businessland), discussed their outlook on the software market.
- A panel of software agents — Bill Gladstone (of Waterside Productions in Del Mar), Andy Goldberg (of Western Technology Brokers in San Jose), Mike Larson (of the Michael Larson-Elizabeth Pamoda agency in San Francisco), and Bob Jacob (a literary agent from Thousand Oaks) — discussed what agents can do for software developers, and, after an intense question-and-answer period, reluctantly concluded that no one really knows how to sell software.
- Philippe Kahn, President of Borland International, gave each attendee a free copy of *Sidekick* and described the path to success in the software industry as taken by Borland.
- Earl Liebich (Director of OEM Marketing and Sales at Verbatim Corporation), Chris Garske (Marketing Manager for Electronic Arts), and Tammy Dunki (Packaging Services Manager at Verbatim), took part in a panel discussing goods and services needed to bring a software product to market.
- Ira Weiss (CEO of 800-SOFTWARE) and Bill Permar (CPA and tax specialist), discussed options in alternative distribution.
- Fred Gibbons (President of Software Publishing), discussed direct marketing of specialized software such as engineering programs and accounting software as opposed to competing in the retail market with general-interest products like word processors and spreadsheets.
- The late Andrew Fluegelman (developer of *PC-Talk*, a highly successful pay-for-it-if-you-like-it communications program), discussed "Freeware," the concept he invented.
- Bob Lefkowitz (Director of Software Services for InfoCorp, a market research and information service company), gave his predictions on the future of the software industry.
- Dave Winer (President of Living Videotext and inventor of *ThinkTank*, the first outline processor), described how he became successful, and what mistakes he would no longer make.

According to Odawa, SEF was not against warranties, just this particular bill. "The bill has much more stringent warranty requirements than those imposed on any other consumer product. The worst part of the bill makes the manufacturer — that's us — responsible for any claims made by any eventual salesman of the product, whether made with our authorization or not. Furthermore, it would open us to punitive damages if that eventual seller did not make good on the product. After the product left our hands, even if we had no control over it, we, the manufacturers, would be left holding the bag. The bill also has provisions opening all sorts of claims for things that might go wrong if someone used our software.

"Again, we're not against warranties. You can write your own warranty, you can say, 'This is my product, this is what it's going to do, this is what I'll stand behind.' We think this is one of the highest and most ethical things you can do. What we're against is this bill. Right now the bill states the warranty must be for six months, which would throw all our sales in doubt for six months. What could happen under this bill is, we could sell 25,000 copies and six months later have all 25,000 come back."

At a recent meeting, packets of five postcards were passed out to each attendee, one for each of the five members of the Senate Insurance, Claims, and Corporations Committee, preprinted with the text of a brief statement requesting that they not support the bill.

All of this effort seems to have worked, because at an early September meeting of the Assembly, Ms. Molina quietly withdrew her bill for lack of support. At the same time, she agreed to meet with SEF and other industry representatives to rewrite the bill in a manner that would protect the consumer without at the same time hurting software developers, publishers, and retailers. SEF takes credit for the victory, having sent out more than 200 letters and made over 60 calls, in addition to Odawa's lobbying efforts in Sacramento. One senator, in fact, told Odawa that he had changed his mind on the bill specifically as a result of having received over 50 cards/letters denouncing the bill (the exact number sent by SEF members, not-so-coincidentally), and nothing in favor of it.

SEF publishes a monthly newsletter to which you can subscribe for $19.95 a year ($30 overseas). Annual membership dues, which include the newsletter, are $75. For those who want more information, SEF also offers anybody a free, three-month, no-obligation subscription to its newsletter. Call Barbara Cass, Executive Director, at 415-854-7219, to receive the first complimentary issue, along with membership information. Each newsletter describes the previous meeting and contains articles about different aspects of the industry, along with SIG reports.

If you are at all involved in the software industry, and you do not own or work for a large software company, you should give serious attention to the Software Entrepreneurs' Forum. SEF may help you make it big in ways you could not do yourself. ☐

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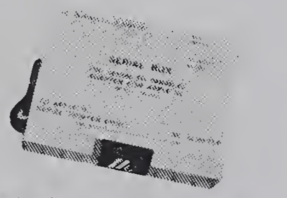

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Hippopotamus Software: Fun And Profit

By Tim Tyler

There's no denying that business software, no matter how useful or necessary it is, can be, quite frankly, tedious and boring. One suspects that there's a myriad of accountants and secretaries out there who get their fill of spreadsheets, word processing programs, and the like on the job.

If you happen to be among those who want to escape from business-oriented software, or if you're one of that unabashed group who simply want to have fun on their PC, there is hope. For the past year, Hippopotamus Software in Los Gatos has been putting the fun back into software programs with their unique brand of packages. Even the company's name has a sporting ring to it, and, according to Wendell Brown, co-founder and president of Hippopotamus Software, that's part of the plan. "It is kind of a playful name," he says, "and outside of the fact that people keep asking us how to spell it, the name has been very beneficial for us. There's a great deal of name recognition to it."

As for Hippo's software, Brown feels it is easiest to relate to from a human standpoint. He says, "Certainly, there is a market for business programs, but, in a sense, I feel it all becomes somewhat dull. Most of the software we develop here is colorful and just plain fun. I feel people find our packages really interesting."

After reviewing Hippo's product line, one would be hard-pressed to disagree. For starters, there is Hippo's *Outrageous Jokes And Quotes* package, containing almost every type of joke imaginable (including a few hippopotamus gags of course) and quotes from noteworthy people. Each joke contains a rating of PG, R, or X, and obscenities are spelled with the first letter followed by a series of stars. Examples: (Joke) "What do you get when a canary flies into a screen door?" Answer: "Shredded Tweet"; (Quote) "We will do anything to keep this company alive" — John DeLorean.

For more practical purposes, Hippopotamus Software offers the *Hippo Almanac*, a collection of over 35,000 useful facts for business, education, or home use. Brown says the package is kept updated because, among other things, it lists foreign currency conversions, which change constantly. The program satisfies the need for easy access and well-organized information; facts are easy to locate on the *Almanac*'s menu of 17 different categories. Some of the *Almanac*'s topics include historical events, sports, and unit conversions; it also gives a listing of over 1,000 toll-free 800 phone numbers. (Since almost all of Hippo's software is designed for Macintosh, it's only fitting that the *Almanac* contains Apple's toll-free 800 number.)

True, Hippopotamus Software does have programs for the more serious-minded user. For example, *Hippo-C* is a full-featured C language compiler for the Apple Macintosh, available in two versions: Level One and Level Two. The first level is for beginning C programmers, while Level Two is designed for experienced software developers.

Another straightforward, practical product the company sells is *Hippo-Lock*, a business data security system which uses the DES data encryption standard originally used by the U.S. Department of Defense.

For the most part, though, Hippo's software is continuing to aim for the light-hearted user. Due out any day now is Hippo's *Sound Studio One*, containing a conglomeration of special effects and noises. The package was reviewed last summer at the MacWorld Expo and was chosen as the most innovative product. Brown describes it as "a musical digital sound system equipped with various other audio effects." The popular favorite seems to be its impersonation of Curly, the most likable member of the Three Stooges comedy team, delivering his infamous line, "Wise guy-eh!"

In the meantime, Brown is keeping four products under wraps for further development, and his engineers have yet *another* four side-projects lurking in the labs. About the laboratory projects, Brown promises, "They will be a lot of fun if they ever reach market."

It's only natural that fun is such an integral part of Brown's company. He was bitten by the computer bug at an early age; by the time he was seven, computers were no mystery to him. By the time he reached high school, he began to build and sell small business computers; within three years, he had amassed $14,000. After graduating from high school in 1979, Brown attended Cornell University, but found it to be "a dull and frustrating experience." He explains, "Cornell turned out to be more of a traditional school. They were not really progressively up to speed on the West Coast Silicon Valley-type projects."

He completed his studies at Cornell in 1982, majoring in electrical engineering and computer science. It wasn't long before he accepted a job at Imagic in Los Gatos as a project leader. Over the next two years, Brown designed and developed video games at Imagic, including the *Star Wars* game for Colecovision. In 1984, after the video game market had cooled off, Brown left Imagic with his co-worker Clint Ballard. Together they founded Hippopotamus Software, Inc., and that's when the fun really began.

The company started off in the garage of Brown's home in Los Gatos, and he describes the whole affair as "crazy." "I stored boxes in my bedroom, and twice a day, Federal Express and UPS would come by. We probably got a lot of strange looks from our neighbors." Yet after one year in business, Brown confirms that everything has basically gone according to plan. "Clint and I had a pretty clear idea of what we wanted to do when we split off from Imagic. Our objective was to offer innovative microcomputer software that is creative, fun-to-use and utilizes advanced software techniques."

What Brown and Ballard did not anticipate was how fast the company would grow. Hippo's days as a mom-and-pop business in a Los Gatos garage are now over. Brown points out, "We've practically doubled our business in the last year, and we're at the point where the company is starting to form an administrative base. Often, a business will begin at a creative base where there is not much organization or procedure. But Hippopotamus Software has reached a level where we have to start thinking about the second order of things, like work flow and computerizing all of our accounting."

The surge in Hippo's business has also forced Brown into concentrating solely on running the company while Ballard and others take care of designing and developing Hippo's products. "My responsibilities include keeping track of sales and financial marketing, plus I give my input into each project," Brown explains. "Obviously, I have very little time to sit down and write and develop software programs."

Asked why he decided to run the business as opposed to letting someone else do the honors, Brown replied, "Mostly because I felt if we do things ourselves, we can get our products out faster, and I think we can turn out better quality merchandise. Essentially, I wanted control of the product. If you do things yourself, you can control your own destiny."

PHOTO: DAVE LEPORI

Hippopotamus Software president Wendell Brown (r) demonstrates the capability of Hippo's *Sound Studio One*. Designer Rick Oliver turns down the volume.

Besides, Brown is beginning to enjoy the life of being an entrepreneur. He feels that managing a small business is comparable to the software he sells. "It's fun," he says. "We only have ten people here, and from a personal standpoint, I prefer being able to oversee the entire operation rather than working for a large company where you never get to know everyone or see everything happen."

As for his business strategy, Brown believes in feeling out the market to see what people's needs are, then fulfilling those needs. It's that simple. One way in which Brown measures the marketability of a product is to subject his merchandise to what he calls a "wow test." This involves letting various people play with a product before it gets distributed to computer stores. If the product evokes a "wow" response from the person playing with it, the item stands an excellent chance of winding up on a software dealer's shelf.

Brown seems relaxed and confident as he says, "Overall, I think you have to be market-oriented in order to be successful to some degree. That includes satisfying people's needs. This strategy has worked for us. At the moment, we're making money." And having fun in the process. ☐

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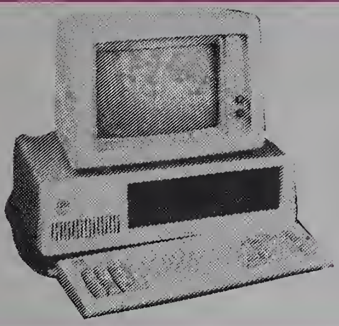

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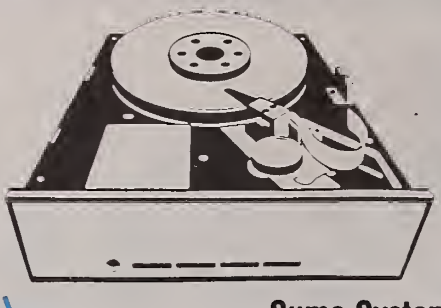

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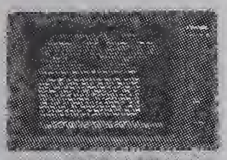

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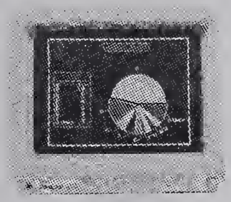

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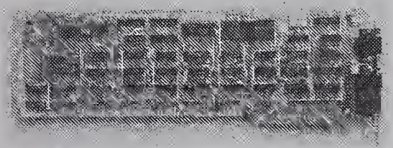

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HP's ThinkJet Printer: A Great Leap Forward?

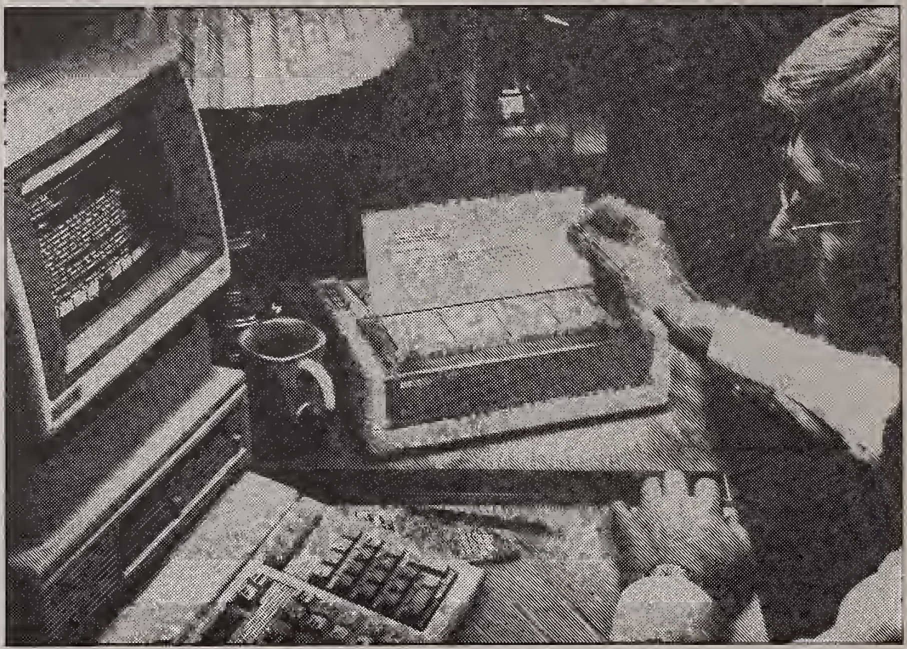
By Mike Markowitz

The HP ThinkJet is an extraordinary feat of mechanical engineering. Whether or not it is a good printer depends on your specific needs. The great advantages of this unit are its amazing quietness, speed and compactness. The print quality is better than low-priced dot matrix printers but not true "letter quality." Graphics are well-supported, with a slight tendency to smudge. The main disadvantages are the special coated paper needed for optimal print quality, and the narrow carriage. Many users may find the paper feed mechanism frustrating. You cannot advance paper by turning a handwheel; you cannot "backup" the paper easily at all.

In normal pitch the ThinkJet prints 80 characters across a 6.67 inch line. For comparison, Epson printers print 80 characters across an 8-inch line. You are obliged to keep nice wide margins when you use the ThinkJet, whether you want them or not. HP claims a speed of 150 characters per second in normal mode. A typical screen graphics dump takes less than a minute.

The print head is a disposable cartridge that contains an ink reservoir sufficient for 500 pages of normal print, according to the manufacturer. Replacing the cartridge is extremely simple, but the plastic parts that position and latch the print head appear to be rather fragile. The ink is squirted onto the paper through tiny apertures that can become clogged if the printer is not used for some time. Clearing the jets is a simple matter of poking the end of a paper clip against the ink bladder and wiping the face of the print head with a clean tissue. The print head costs about $6, and is sealed inside a neat little jam tin to keep it fresh. The diethylene glycol used as a solvent in the ink is toxic, so the print heads should be kept away from toddlers and pets.

The paper feed mechanism can handle single sheets. The friction feed wheels are made of a gritty substance that looks like sand embedded in plastic. The tractor feed pins can only be moved using the line feed or form feed buttons — no manual hand wheel. Loading paper is easy: this clumsy writer got it right the first time. To remove pin-feed paper you must flip back the ball roller and carefully unhook the sprocket holes of the paper from the tractor feed pins. It takes some practice to get the hang of it, but it is no great problem.



The Hewlett-Packard ThinkJet printer is compact and quiet, and may be the best and most economical printer for your needs.

HP's operator manual is one of the best I have ever seen. It reflects their long experience as a maker of electronic test equipment. In the first section, all major functions are explained in pictures, with minimal text in English, German, French, Spanish, Italian, Dutch, Danish, Norwegian, Swedish and Finnish. In the second section (all English) all printer features, control codes, maintenance and troubleshooting, mode select switches and character sets are explained clearly and completely.

The mode select switches ("DIP switches") are easily accessible on the back of the unit. On many other printers they are hidden behind panels or deep inside the machine. We have one location where the printer is used alternately with an IBM PC XT and an Apple II+. Changing between computers is quite simple.

The printer power switch is located on the back of the unit, but the red LED power on indicator is clearly visible on top. The line feed button advances the paper a fraction of a line when it is pushed once, a whole line when it is pressed a little longer, and continuously when it is held down. "Top of form" is reset to the current line position whenever the printer is powered up.

Our unit was supplied with a simple snap-together plastic stand that allows a whole ream of fan fold paper to sit under the printer, and keeps the power cord and cable neatly out of the way. The special paper is highly absorbent. If you spill anything on it, the ink will run. Felt-tip pens tend to blot on this paper, but pencil and ball-point write beautifully. In quantity, the paper is about $30 for a box of 2500 sheets.

The HP ThinkJet is ideal for an office environment where noise is a problem. The high speed of the unit is an advantage when drafts must be turned out in a hurry. The ability to do graphics gives it a definite edge over the typical office daisy-wheel dinosaur. HP's reputation for reliability and support has been well-earned over many years. If you need color, check out the new Canon color ink jet printer. If you need high speed with very high print quality, wait until laser printers become affordable. Otherwise, the HP ThinkJet may be just the right balance of price and performance for your needs and budget. A battery-powered version is available. ☐

How It Works: *The Technology Of The HP ThinkJet*

Typical printers for personal computers use electromagnets ("solenoid hammers") to bash formed letters or patterns of print needles against the ribbon. This takes energy. Some of this energy does useful work transferring ink to the paper. The rest becomes noise and heat. The noise makes us crazy. The heat wears out the moving parts.

The HP ThinkJet uses a print head with no moving parts. Only the ink moves. Tiny resistors behind the microscopic ink nozzles receive precisely timed jolts of current. Within microseconds, the temperature shoots up to over 300° centigrade. The ink adjacent to the resistor flashes into vapor, and the expanding vapor bubble acts like a tiny piston, forcing a droplet of ink out through the nozzle and onto the paper. The concept is as old as the steam engine, but to make it into a workable print mechanism, HP's engineers had to solve some tricky problems in miniaturization, materials, and mass production.

The entire print head had to fit into a volume of one cubic inch, including the reservoir of ink (over eight million droplets required!) The twelve nozzles, spaced only a quarter of a millimeter apart, could not have any "crosstalk" — each one had to be able to fire independently of the others. The disposable printhead had to make reliable, positive contact with the flex cable carrying impulses from the printer's circuit board.

The orifice plate, which contains the nozzles, was first designed with laser-drilled holes, but these proved to be too rough. For mass production, the part is formed by electroplating nickel onto a stainless steel form, then stripping off the formed sheet of 240 plates. These are bonded to a "substrate" containing the resistors and electrical contacts.

The ink is held in a collapsible rubber bladder, which allows simple visual inspection to see how much ink remains. As the reservoir empties, a slight suction caused by the natural resiliency of the rubber prevents the ink from "drooling" out the nozzles.

The power consumption of the print head is less than one one-hundredth of the current a typical dot matrix print head requires. The paper feed and print head drive motors were designed to use minimum power, doled out by a sophisticated switching power supply.

An optical "home switch" precisely times the arrival of the print head at a certain position, so the drive electronics can be continuously adjusted to maintain print alignment. A custom 48-pin microprocessor was designed for maximum compatibility with other Hewlett-Packard devices, while providing easy connection of the printer to Apple or IBM personal computers.

Weighing in at less than six pounds, and occupying a desk space no bigger than a good dictionary, the HP ThinkJet is proof that American technology can still compete with the best Japan has to offer.

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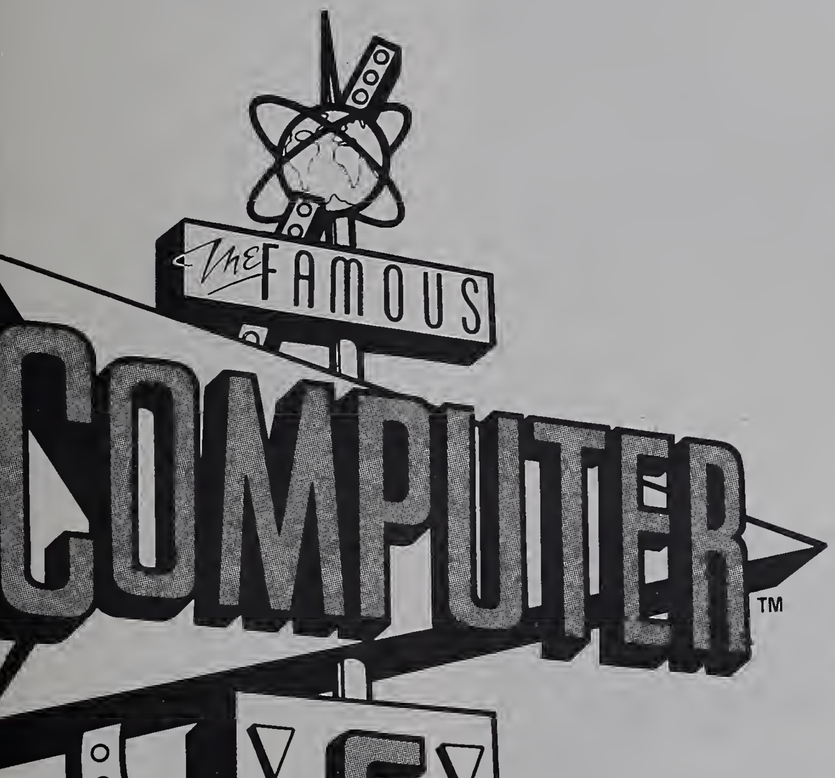

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How To Choose The Right Printer

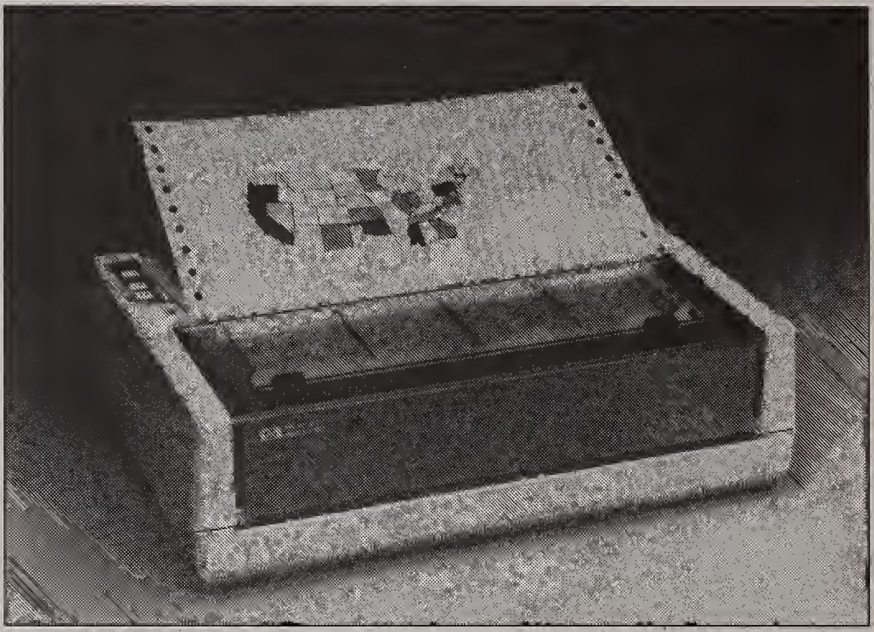
By Seth Novogrodsky

Without a printer, a computer is not particularly useful You can play games and teach yourself the rudiments of programming, but there's not much else you can do without some type of physical output from your computer. Unfortunately, choosing the best printer for your needs isn't always easy. In comparison, buying a household appliance such as a refrigerator or a television is simple. You can go to any large department store, pick a television at random, go home, plug it in, and expect it to work. Not so with a printer. You will first have to figure out what sorts of printers will work with your computer. In order to work together, both the computer and the printer must have compatible interfaces.

"Interface" is computerese for hardware that allows one piece of computer equipment to work with another. Some computers do not include a printer interface as a standard feature. For these computers, you will have to buy the interface, which is usually a small circuit board. The interface on the computer has a connector for a cable that attaches to another connector on the printer.

Two types of interfaces are most common for printers used with personal computers: the Centronics parallel interface and the RS-232C serial interface. The difference between these types of interfaces is that data travels through several wires simultaneously with a parallel interface, whereas only a single wire carries data with a serial interface.

Once you have determined that both the printer and the computer have compatible interfaces, you still can't be sure that your printer and computer will work together. There are few things as disconcerting as spending a lot of money on a fancy new printer, only to discover that it won't work with your computer. However, in most cases, all that's needed is a little tinkering. First make sure you have the proper cable. Although there are standard connectors for both serial and parallel interfaces, not all computers use them. In this case, a special cable is required; sometimes a custom cable may be needed. Another potential pitfall is that serial interfaces don't always use the same signaling schemes to transmit data. Again, custom cables may be required.



One of the advantages of dot matrix printers is that they can usually print graphics as well as text. Shown here: the Hewlett-Packard ThinkJet printer.

Apple Computer's new ImageWriter II is an impact-type dot matrix printer. It provides built-in color printing capabilities as well as draft, correspondence, and near-letter-quality output options.

The Juki 6300 daisywheel printer provides true letter quality output.

Even if your computer and printer are completely compatible with regard to hardware, your software may present a problem. Many software packages are designed to work only with certain printers. In order to take advantage of special features that your printer might have (multiple font sizes, graphics, underline, etc.), the software must "know" the exact type of printer being used. Unfortunately, different printers require different electronic signals to accomplish the same tasks. Many word processing programs, for example, come with an installation program that lets you select the printer from a menu. If your printer is on that list, you are in luck. If not, there still may be hope. Some programs have a provision for the installation of a "non-standard" printer. The installation of a "non-standard" printer isn't difficult, but it may be confusing for someone with no computer experience.

Some manufacturers have officially sanctioned using particular models of printers with their computers. Not coincidentally, these printers are usually manufactured for or by these companies. These printers generally have the widest degree of support by software vendors. A number of printer manufacturers have introduced printers that respond to the same electronic commands as the manufacturer-sanctioned models; these printers often cost less and have more features than the printers they emulate. For example, if your computer is an IBM PC (or clone), you might consider getting a printer that can emulate the IBM Graphics Printer (or IBM's new Proprinter, which is compatible with the Graphics Printer but also has additional features). Likewise, if you own a Macintosh, you might want to get a printer that is compatible with the Apple ImageWriter.

These compatibility issues should not be underestimated. For instance, even if you buy a printer to use with your Macintosh and it does respond to the same commands as the ImageWriter, you will not be able to print any of the special fonts that appear on the screen without special software. If special software is readily available, you shouldn't have much trouble; otherwise, you won't be able to take advantage of the special features of the Macintosh that may have led you to choose that computer in the first place.

One other factor that you may want to keep in mind is that printers that emulate the popular models of printers from major manufacturers (such

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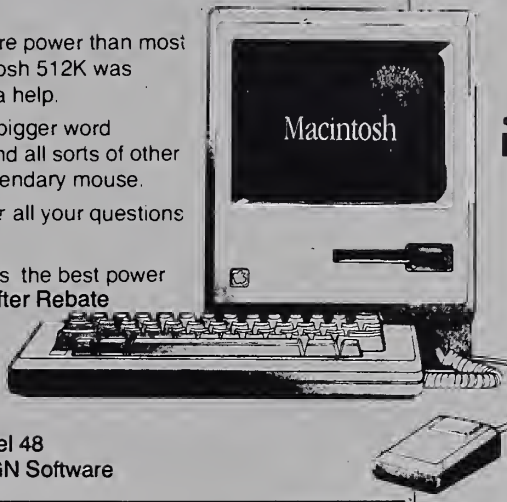

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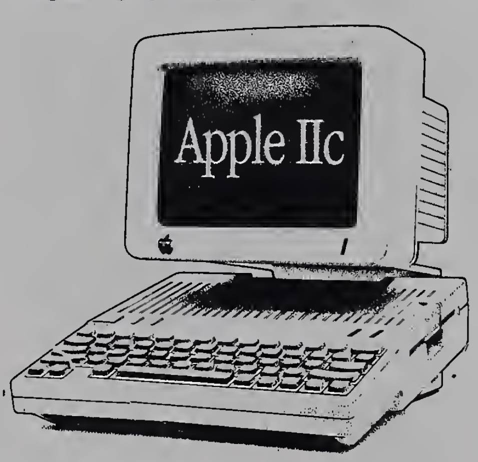

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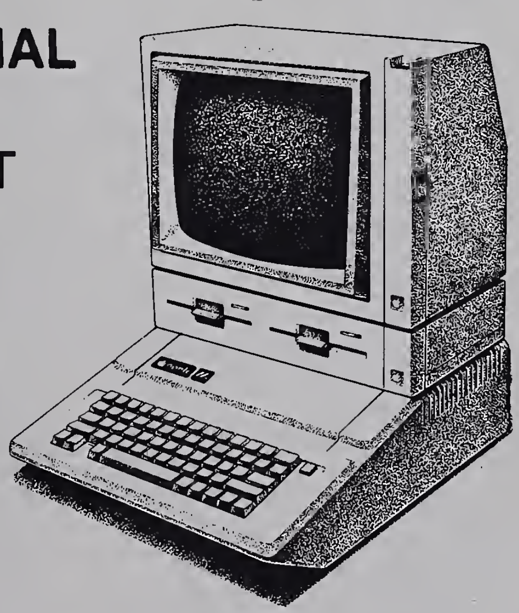

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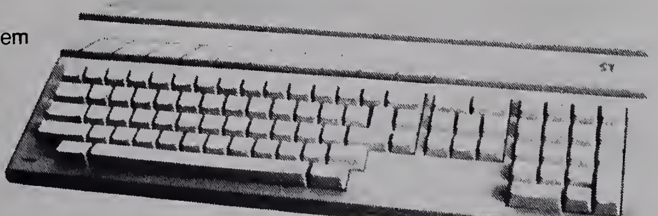

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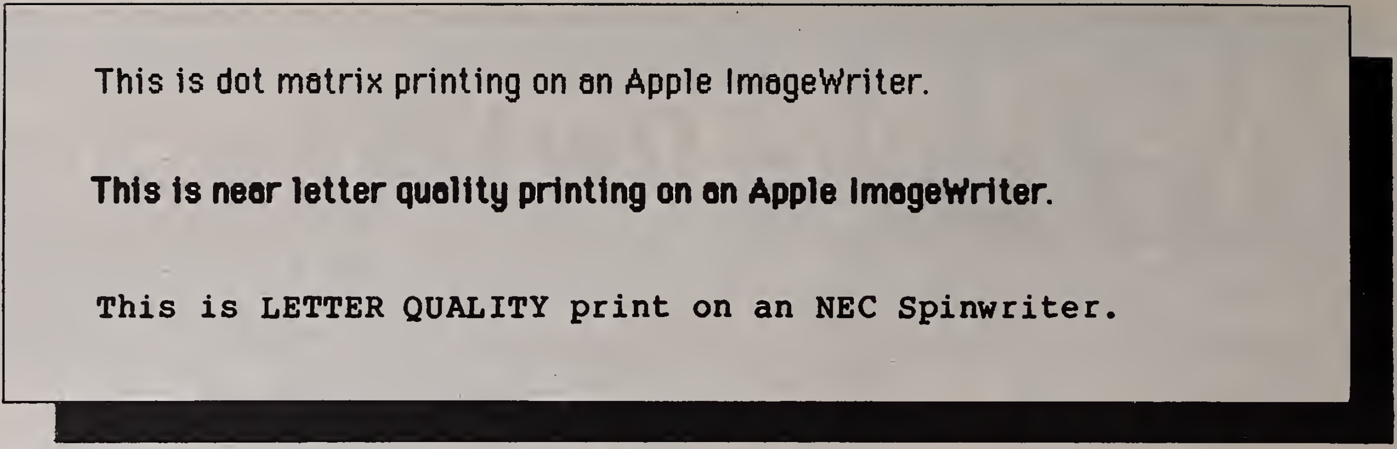

This is dot matrix printing on an Apple ImageWriter.

This is near letter quality printing on an Apple ImageWriter.

`This is LETTER QUALITY print on an NEC Spinwriter.`

as Epson and Diablo) often have a great deal of software support.

Once you are aware of all these compatibility issues, you now have to decide what features you want and how much money you're willing to spend. The first question to ask yourself is what you're going to use the printer for. For example, if you're going to be printing out large volumes, speed is going to be an important factor. If you're going to use your printer solely for formal correspondence, print quality will be a very important consideration. If you need to print out charts and graphs, graphics will be important. If you will need to print on stationery, envelopes, mailing labels, index cards, or wide or multi-part forms, then you must be sure that your printer will accommodate them. If you're going to use your printer for academic papers, you will probably require word processing functions such as superscript, subscript, underline and boldface. If you are going to use your printer to put out a newsletter, then multiple fonts and type sizes may be convenient.

Dot matrix printers are among the most flexible and least expensive type of printer; they are also the most common. Dot matrix refers to the way the characters are formed. Each letter, symbol, or graphic image is comprised of a matrix of tiny dots. Sometimes the dots are large and widely spaced, resulting in text that looks as though it were printed by a computer. In more expensive dot matrix printers, the characters are almost indistinguishable from those produced by a high-quality electric typewriter. Because all images are created from tiny dots, many dot matrix printers can print graphics, some even in color.

Dot matrix printers vary widely in features. There are several different technologies used. Most dot matrix printers are impact printers; these have a printhead that physically strikes a ribbon and thereby transfers ink to the paper, in much the same way that a typewriter works. Most impact printers can be used with multi-part forms, depending on how hard the printhead hits the ribbon. The printhead, which moves back and forth across the page, usually has from seven to 24 wires or pins that come into contact with the ribbon. To a certain extent, the number of pins on the printhead determines the quality of text or graphics produced.

Two examples of non-impact dot matrix printers are inkjet and thermal printers. In an inkjet printer, small drops of ink are squirted from tiny nozzles onto the paper. The quality of print on an inkjet printer can be very high, and some can produce high quality color graphics. Normally, special paper is used with inkjet printers; otherwise, the images often become smudged. Thermal printers also require special paper. A thermal printer has a printhead much like that of a conventional impact dot matrix printer, but the printhead, instead of striking a ribbon, comes into contact with heat-sensitive paper. Characters are formed when the wires of the printhead heat tiny spots on the paper. A unique thermal printer that does not require special paper is the IBM Quietwriter, which uses "resistive ribbon" print technology. This printer requires a special layered ribbon; the printhead melts part of the ribbon's coating, allowing ink to be transferred to the paper. The output of the Quietwriter is virtually indistinguishable from that of an electric typewriter.

All of the non-impact printers we've discussed are much quieter than comparable impact printers. If noise is an important factor for your application (for example, a noisy printer may pose a problem in a library), you might want to consider getting a printer that makes use of one of these non-impact technologies.

One of the best reasons for considering dot matrix printers is that they are very fast when compared with other types of printers in the same price range. Two measures of print speed are commonly used. One is the number of characters per second (CPS). A typical dot matrix printer might be rated anywhere from 80 to 200 CPS. The other is the number of lines per minute (LPM), which tends to be a much better measure of actual printer performance, because the CPS figures supplied by manufacturers are for maximum speeds under ideal conditions, not taking into account the amount of time it takes for the printhead to advance to the next line. Most of the dot matrix printers currently being sold are bidirectional, which means that the printhead prints both backwards and forwards as it moves across the page. Unidirectional printers tend to be much slower. If you come across a unidirectional printer rated at 100 CPS, you should realize that it may very well be a good deal slower than a bidirectional printer rated at 80.

Print quality in dot matrix printers varies from the scarcely legible to letter quality. Many dot matrix printers feature a special mode called "correspondence quality," "near letter quality," or "letter quality." Do not accept manufacturers' claims as to what these terms mean. The term "letter quality" refers to text indistinguishable from that produced by an electric typewriter. Some dot matrix printers that claim "letter quality" actually produce text which is easily distinguishable from that of a typewriter on close inspection. You pretty much have to decide for yourself what degree of print quality you require. If you do require letter quality output, you may be better off with a "fully-formed-character" printer described below. Most correspondence and near letter quality modes do indeed produce attractive text, but it is nearly always possible to tell that the output was generated by a computer. Whenever possible, it is a good idea to obtain a print sample of any printer that you are seriously considering.

Most dot matrix printers can also print in a variety of font sizes, typically ranging from five to 17 characters per inch (CPI). Virtually all printers will print pica (10 CPI) and many will also print elite (12 CPI). Most dot matrix printers have a compressed mode (16.5 to 17 CPI depending on the printer) that will print from 132 to 136 columns on a standard 8-inch line, and expanded modes that will double the width of the characters. Some dot matrix printers even permit proportional spacing, in which not all characters are the same width. For example, a capital *M* will take up more space than a lower-case *i*. Some printers will permit you to vary the line spacing from the standard six lines per inch; you can save paper by using eight lines per inch if your printer has this feature.

One more consideration to keep in mind when evaluating dot matrix printers is the variety of fonts available. Many dot matrix printers can print italics. Some have a set of tiny super- and subscript characters. Others will let you "download" a custom character set from your computer (e.g. the Greek alphabet or special mathematical symbols) or even accept plug-in font modules.

If you must have letter quality output, you will probably want to look at some "fully-formed-character" printers. Dot matrix printers with letter quality output tend to be fairly expensive, and fully-formed-character printers can provide an affordable alternative. These printers have print mechanisms that accept mechanical type elements (either daisy wheels or special thimbles), much like many office typewriters. The type element on these printers spins around much like the blade of a propeller, and a tiny hammer strikes the proper character as it passes. These printers are impact printers. Although they lack some of the features of dot matrix printer, they produce high quality output. Most support word processing functions such as underlining, boldface, and sub- and superscript (as do many dot matrix printers). Some can accommodate multiple type sizes, including pica, elite, and micron (15 CPI). Some will also print proportionally spaced characters.

The main drawback of these printers is that they tend to be slow. Speed ranges from 10 to 80 CPS, but most low-cost fully-formed-character printers operate at from 10 to 20 CPS, much slower than comparably priced dot matrix printers. Also, most have either very limited or no graphics capabilities. Changing type fonts, however, is as easy as changing the type element.

One other type of printer that you may want to consider if you require letter quality text is a laser printer. These printers look like a small office copier. They typically print at speeds starting at about 8 pages per minute (which works out to about 400 CPS depending on the way it is calculated). The main drawback of this type of printer is that prices start at around $3000, which may be more than what you paid for your whole computer. However, prices are likely to fall, and many laser printers have excellent graphics capabilities. Nearly all support a wide range of type fonts.

There's one last issue you should think about before buying a printer — where to buy. Although many sources sell printers at greatly discounted prices, it will very likely be to your advantage to buy from a reputable dealer. The store where you bought your computer may be the best place to start. If there are compatibility problems, a good dealer will be able to solve them. Likewise, if your printer ever needs servicing, a good dealer will be able to fix it or send it to factory authorized technicians to have it fixed.

The printer marketplace is full of well-designed printers, many of which will probably meet your needs. In order to find the best printer for your particular requirements, you should shop around for both the printer and the dealer. Choosing the right printer may not be all that easy, but it's definitely worth the effort. Most of the difficulty involved is that there are so many excellent printers on the market to choose from. ☐

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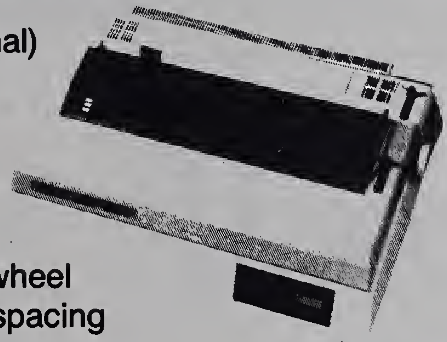

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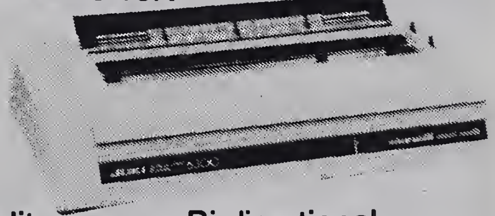

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By Tim Tyler

You don't have to travel to the far ends of the earth these days to locate a computer training workshop. Several corporations and public entities have been instituting workshops that satisfy the need for computer instruction.

On the other hand, a computer repair workshop seems to be a rare commodity, especially one which travels all across the country. In fact, the Cascio School of Technology, based in San Ramon, is the first one of its kind, as far as anyone knows. This unique concept was the brainchild of Richard Cascio, a former computer repairman for the San Ramon Valley School District. His son John, who describes himself as "an overseer of things" at the San Ramon headquarters, says his father "came up with the idea a little over a year ago when he was working for the district. He took an analysis on microcomputer repair and realized anyone can perform the majority of repairs on personal computers." The results of his analysis revealed the following: 60% of all repairs were non-technical and capable of being fixed by anyone, 50% of all repairs requiring technical expertise could easily have been prevented, and 10% of all repairs that were not technical and were not preventable could have been remedied by chip substitution (replacing a bad chip with a good chip). Propelled by these findings, Cascio started his own school of technology.

The school offers two workshops, "Computer Repair" and "Disk Drive Repair." Both are one-day, eight-hour courses and are held in different cities around the United States, usually in a weekly series format. "We're in the Bay Area just as much as anyplace else," says John, adding, "The workshops are held in hotel conference rooms. We stay in the nicer hotels near airports because it's convenient for our clients who travel around a lot, plus it makes it easier on our instructors as well." Clients can select either the computer repair workshop for a fee of $150 or the disk drive repair shop priced at $195. Since the courses alternate every other day, people may choose to take both; in addition, private workshops can be designed for user groups and corporate training.

Every two students are provided with a microcomputer for ample hands-on training, or they may bring their own if they wish. Furthermore, each student is supplied with a tool kit, manual/troubleshooting guide, chip catalogues, and a full course lunch.

But the single most valuable aspect of Cascio's workshops is learning how to do the computer repairs yourself. In an age when most people have adopted an "I'll fix it myself" attitude due to sky-rocketing repair costs, Cascio's workshops certainly make good economic sense. As Lucinda Melchior, Cascio's marketing director, points out, "The minimum cost of repairing a personal computer is approximately $50. If you repair your system three or four times because of our workshops, then the course has already paid for itself."

John Cascio notes that a person can attend technical training sessions given by manufacturers like Apple and IBM, but says, "Some cost you around $1000, and they only teach you how to fix their brand of computers. In our workshop, one of the big things is that we don't get machine specific. We don't talk Apple and we don't talk IBM — we talk computers, period. We teach people how to apply the techniques on any personal computer."

Cascio's workshops attract a variety of clientele, but a large number of clients come from schools and businesses. John figures this is probably due to problems, associated with repair services, which have an adverse effect on the educational system and the business world. "The first problem, of course, is costs," says John. "Most people seriously pay for their repairs. In the schools, the factor of cost hurts because many schools cannot afford to get their computers fixed. With businesses, it's a matter of turnaround time, which in most instances is really poor. In the meantime, the business is losing money. Like with us — we could not afford to have our computer out for two or three weeks. My father has seen these problems, and he recognized the need in this community and others to minimize them.

"In the computer repair workshop," he continues, "our main objective is to give the user, without any prior experience, the ability to repair 75-plus percent of their problems on computers. It applies to all PCs, word processors, and to terminals off of mainframes; mostly with keyboards which go bad. This happens frequently because people have a tendency to spill their coffee or other liquids all over their computer." Adds Melchior, "The course also demystifies computers at the beginning of the class, which is how we help our clients get over the computer mystique."

Add to the knowledge of the computer repair shop by taking the disk drive repair course, and John estimates that you can fix 90% of computer malfunctions on all PCs. The disk drive repair course deals strictly with the maintenance and repair of the floppy disk drive, the most common malfunction of personal computers. Students who select this workshop are also provided with an alignment device, invented by John's father, which eliminates the need for an oscilloscope. With the device, students can perform their own disk drive head alignment on all the front-running brands of disk drives.

While Cascio's School of Technology goes out of its way to meet the needs of clients, John emphasizes that the main concern is giving quality instruction. To ensure that students absorb all the necessary information, the class sizes are limited to forty students in the computer repair and thirty students in the disk drive repair course. "This way, we can devote specific attention towards people," reasons John. "The other way we maintain quality teaching is by hiring instructors who are of the highest caliber."

Melchior says John's father used to teach some of the workshops and would travel quite a bit. "He's too busy for that now," she says. "Dick is a real innovator and he's always been that way. If he wants to learn something, he'll sit down and read a book on the subject and learn it. The man is a musician, he can fix cars, or fix practically anything for that matter— Mr. Cascio has a very inventive mind."

John adds, "Basically what we have to offer is based on his forte. That is, the ability to take a look at the whole, condense it, and throw out all of the garbage and give back what you need to know in down-to-earth, easy-to-understand terms. It's an ability he has that's real rare." (Class schedules and registration forms can be obtained by contacting Cascio's School of Computer Technology at (415) 829-5140 in San Ramon. No pre-requisites are required for Cascio's workshops.) ☐

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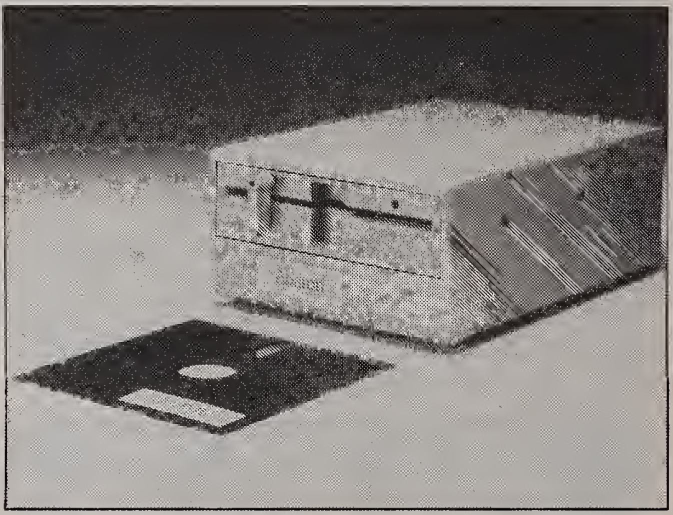
Abaton Technology: Shortcuts To Broaden The Mac's Software Base

By Mary Eisenhart

The Abaton Transform converts Apple II programs to run on Macintosh



The Abaton Drive 5.25 allows software from various 5¼" formats to be used on Macintosh computers.

Although the situation improves daily, one of the Macintosh's greatest drawbacks from the user's standpoint is the relative shortage of available software. While there's plenty available for most applications in Apple II, CP/M and IBM-compatible formats, there are still gaps in the Macintosh software market.

From the developer's point of view, there are good reasons for this deficiency. Each machine's individual version of a program has to be substantially reworked, often reprogrammed virtually from scratch. The Macintosh, with its 16-bit microprocessor and radically different user interface, poses particular difficulties. While larger software companies have the money and personnel to deal with this problem, the small developer often has neither, and thus finds the cost and effort involved prohibitive.

Enter Abaton Technology, a Santa Monica-based company founded in March 1985. Its goals, according to co-founders Glen Fleck and Byron Wagner, "are to break down barriers that hinder people from using computers and to create products that will make the personal computer, including Apple's Macintosh, more accessible to the non-specialist." Continues Wagner, "The philosophy behind the development of the Macintosh is a good one. Abaton intends to expand on that user-friendly ideology and thereby offer business people and educators powerful technological tools that do not require extensive computer technological knowledge."

Two of Abaton's initial offerings render Macintosh accessible at different levels. One, the Abaton Transform, is chiefly a developer's tool which converts Apple II application software into native Macintosh programs. The other, Drive 5.25, allows the Mac user to run programs created on IBM, CP/M, and, by early next year, Unix machines.

The Abaton Transform, available to programmers for $1995, translates Apple applications, including screen graphics, to Macintosh. The device consists of a sealed add-on card for the Apple, a cable and software on 5¼" and 3½" diskettes. The transformation procedure takes place at object code level and does not require source code, regardless of what programming language was originally used. The resulting program looks and works like the original program running in Apple II's monochrome mode. It respects the Mac's Finder and operating system, and may be copied or sent by modem. For simple applications, the procedure takes about 15 minutes; for the most complex Apple II programs, it takes less than six hours.

This, according to Wagner, is a particular boon to vertical market developers. He cites the hypothetical example of the author of a package for feed-lot management; it's been running quite nicely on Apple IIs for years, but now he's starting to get calls from customers who want to convert to Macintosh. Needless to say, such a developer doesn't have thousands of programmer-hours at his disposal. With the Abaton Transform, however, he can do what Wagner terms a "quick-and-dirty" Macintosh version that functions virtually identically to the Apple version; he can then test the waters and determine whether or not there's sufficient demand to justify the effort required to make the program fully utilize the Mac's features.

Fleck adds that another set of potential clients who express interest in the product are those who believed, years ago, that the Apple II could indeed be used for anything and proceeded to write their own software for their own personal use. Since these are not commercial developers, they don't want to go through the elaborate procedures and lengthy learning process of becoming Macintosh developers; they just want to convert to the more powerful machine. Again, the Transform meets this need nicely.

However, before you whoop with glee and rush off to buy a Transform to convert your software library to Macintosh, there are a few legal considerations. Wagner stresses that the product is intended as a developer's tool rather than a device for end-users; before you can buy a Transform, Abaton requires that you sign a lengthy licensing agreement which states in part: "To prevent possible infringement of a third party's copyrights, the conversion is licensed to LICENSEE on the express condition that it only be used to convert software the copyrights of which are owned by the LICENSEE or as to which LICENSEE holds an exclusive license." The Transform will also not work on copy-protected disks. Thus, the purchaser of the device is effectively prevented from copying commercial packages; the licensing agreement is also designed to prevent lending the device to third parties or the use of Transform by software copying services.

Abaton's legal consultants are working to broaden the range of Transform's legitimate applications. "The problem," Wagner says, is that our product breaks the usual barriers and isn't covered by existing copyright law." If the legal ramifications can be worked out, he suggests, the Transform device could be very useful to educational consortia which currently have a huge installed base of Apple II hardware and software and have been hesitant to invest in Macs. Likewise, user groups might be able to use the device to translate public domain software for members — *if* they had the permission of the programs' authors to do so. Eventually, Wagner says, there may also be Transform franchises offering the copying service to the public.

All of this, however, is still in the future. In the meantime, the Transform serves mainly to relieve the developers of many cumbersome, repetitive procedures in creating Mac versions of their programs; this, in turn, will give the non-programming Macintosh user access to more software.

On the other hand, Abaton's Drive 5.25 is intended directly for end users. It reads and writes files created on numerous 5¼" formats on the Macintosh. For example, a user with an IBM PC at work and a Mac at home can use files created on either machine on the other. (An additional benefit is that Mac files can be stored on 5¼" floppies, which are considerably less expensive than Mac diskettes.)

Drive 5.25 also operates as a stand-alone, 4 MHz, Z-80 CP/M system; it includes a licensed copy of CP/M 2.2 and documentation. This feature allows the user to run any of the vast number of CP/M programs — including *WordStar*, *dBase*, and *SuperCalc* — on a Macintosh. To further enhance its versatility, the drive has an external connection which supports single- or double-sided 5¼" drives, not to mention 3", 3½", 8", and some tape drives. It also has an RS-232 serial port and a Centronics-compatible parallel port.

Drive 5.25 currently reads and writes files created on a variety of IBM and CP/M floppy disks. By

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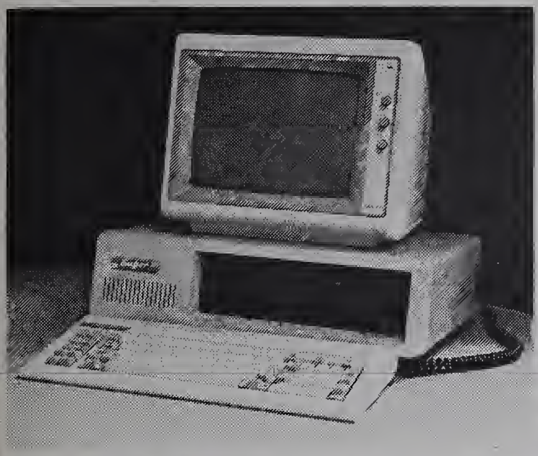

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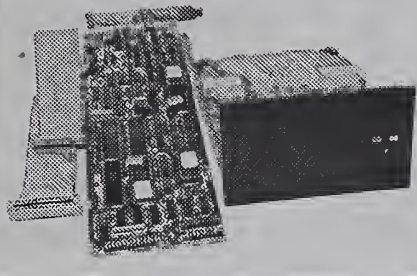

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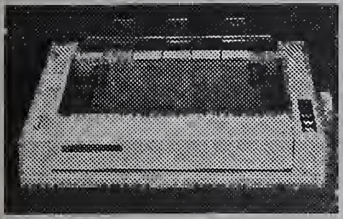

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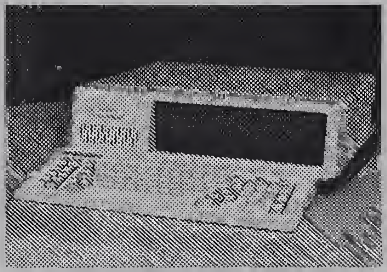

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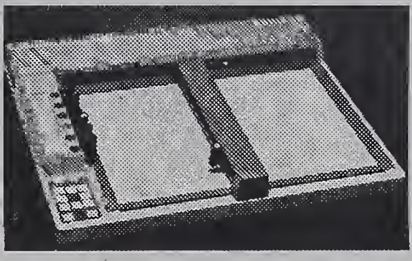

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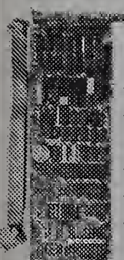

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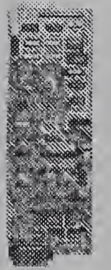

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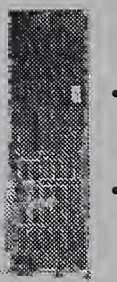

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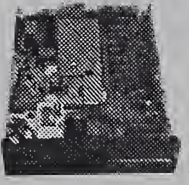

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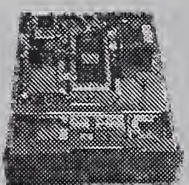

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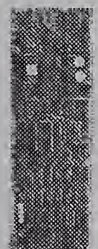

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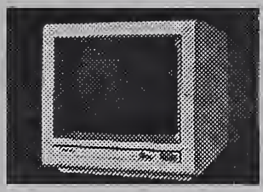

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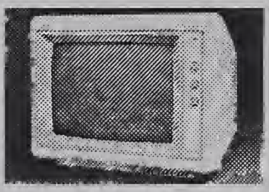

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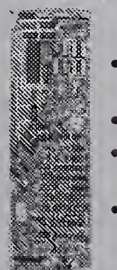

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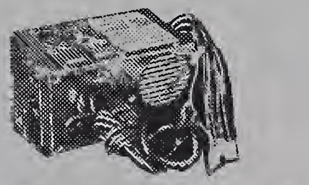

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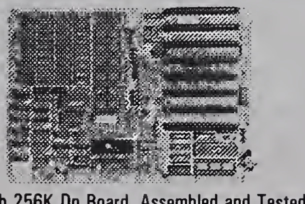

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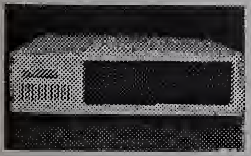

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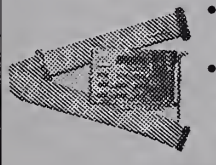

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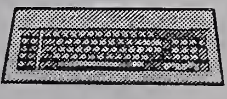

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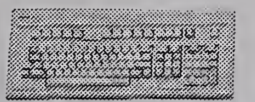

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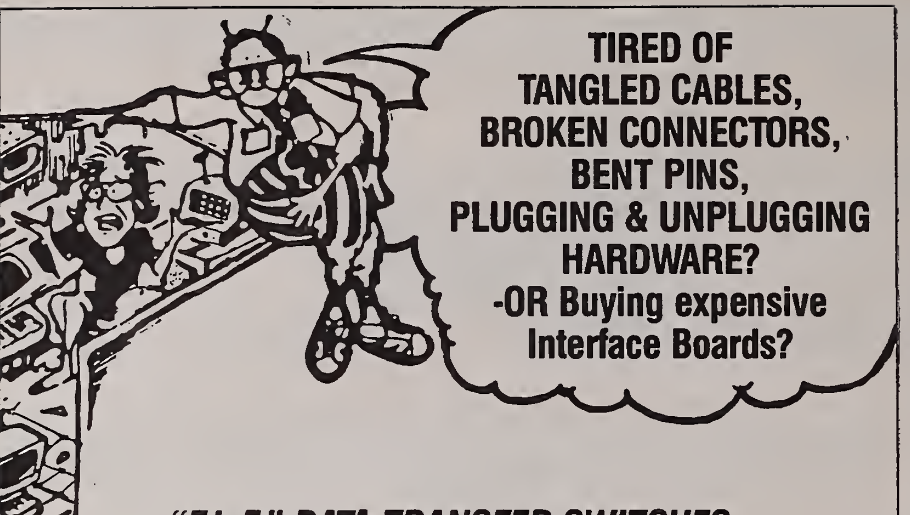

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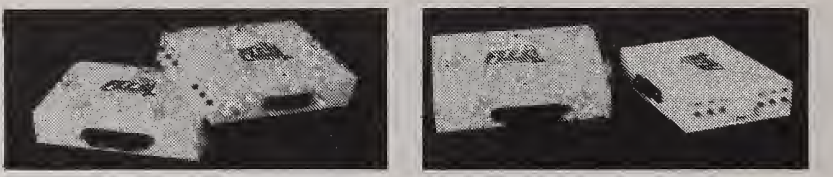

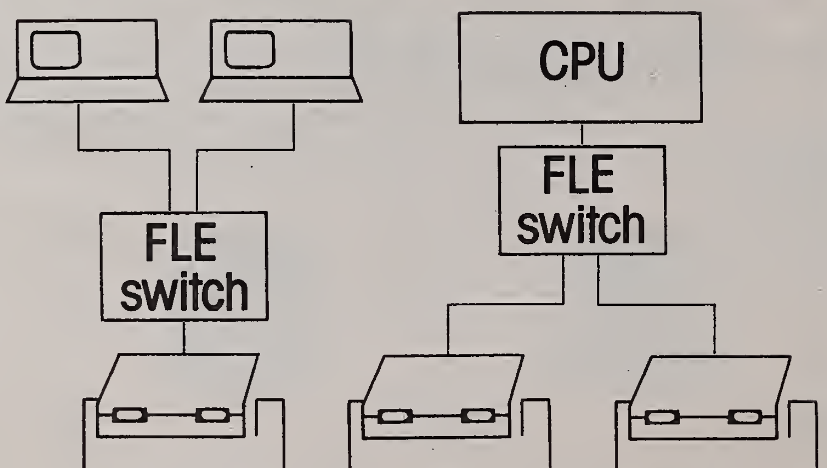

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January 1986 it will also handle Unix files.

Practically speaking, Drive 5.25 should provide considerable impetus in Apple's campaign to convince the business community that Macintosh is more than a toy. Using the drive, those who always liked the Mac's ease of use and saw the potential of its power, but couldn't bring themselves to part with 1-2-3, can now enjoy the best of both worlds.

For information about these and future products, contact Abaton at 1526 Cloverfield Blvd., Santa Monica, CA 90404, (818) 905-9399. ☐

Serious Mac Exploration With MacNosy

By Mary Eisenhart

Since the dawn of Macintosh, Apple Computer has been exceptionally supportive of would-be software developers, providing them with reams of documentation in the form of *Inside Macintosh*, along with extensive technical help. Nonetheless, developers soon discovered serious gaps in the available information. Prospective upgraders had trouble figuring out how the Mac's ROM worked. Software developers encountered significant obstacles in their attempts to discover how different Mac programs interfaced with each other — which, in turn, interfered with their efforts to create software that worked with existing applications. Sometimes, after months of waiting and miles of red tape, the information was forthcoming. Sometimes it wasn't.

The computer world being what it is, there's usually somebody around who's only too anxious to fill such vacuums. In this case, it was Steve Jasik, whose explorations of the Macintosh and its 68000 microprocessor chip led him to create *MacNosy*, a global interactive disassembler which allows the recovery of source codes from Macintosh application files, ROM, or code resources on the System file.

MacNosy is a serious tool; if you're not a knowledgeable programmer with a good command of assembly language, it's not going to be of much use to you. If, on the other hand, you're trying to write software for the Mac, or engaged in some other enterprise that requires knowledge of the machine's inner workings, it might make your life a lot easier.

According to Jasik, *MacNosy* has been used for a variety of reasons, ranging from an educational aid to teach programmers 68000 assembly language and effective programming techniques (by studying the work of those who have gone before) to finding and bypassing what Jasik, with true hacker enthusiasm, calls "obnoxious copy protection schemes." (He cautions, however, that much existing copy protection, especially in games, is encrypted to such an extent that *MacNosy* can't unravel it.) It's also been used to reconstruct information on crashed disks.

MacNosy arose out of Jasik's own interest in exploring the Macintosh. His chief experience with computers before the Mac's advent was with mainframes at Control Data Corporation, where, among other projects over the years, Jasik wrote a global optimizing FORTRAN compiler for CDC's Cyber 170 systems. His specialty was in code generation; however, in his pursuit of knowledge about the 68000 chip he decided that writing a code generator would be far too time-consuming and that writing a disassembler would be more practical.

In the pre-personal computer days, recalls Jasik, source code was freely available, out of necessity. Programmer B could not proceed with his work without access to Programmer A's code. After the personal computer arrived on the scene, the programmer's life became more complicated, information harder to get, and disassemblers more useful. "A disassembler," Jasik explains, "reverses the process of program assembly. It takes a file that consists of object code for a given machine and translates it back to a sequence of instructions and data expressed in assembly language format. Given the poor quality of the [Mac's] documentation and the general lack of source listings, a powerful disassembler is a useful tool for debugging and getting information about the system."

For memory upgraders and software developers who want to optimize their use of the Mac's operating system and existing programs, *MacNosy* has proved a valuable tool by addressing a significant information need. Or, as Jasik puts it, "Apple's been very cooperative with developers, but I felt there was a big information gap between what was available from Apple and what developers really wanted." For more information and a detailed explanation of how it works, contact Jasik Designs, 343 Trenton Way, Menlo Park, CA 94025, (415) 322-1386.) ☐ .

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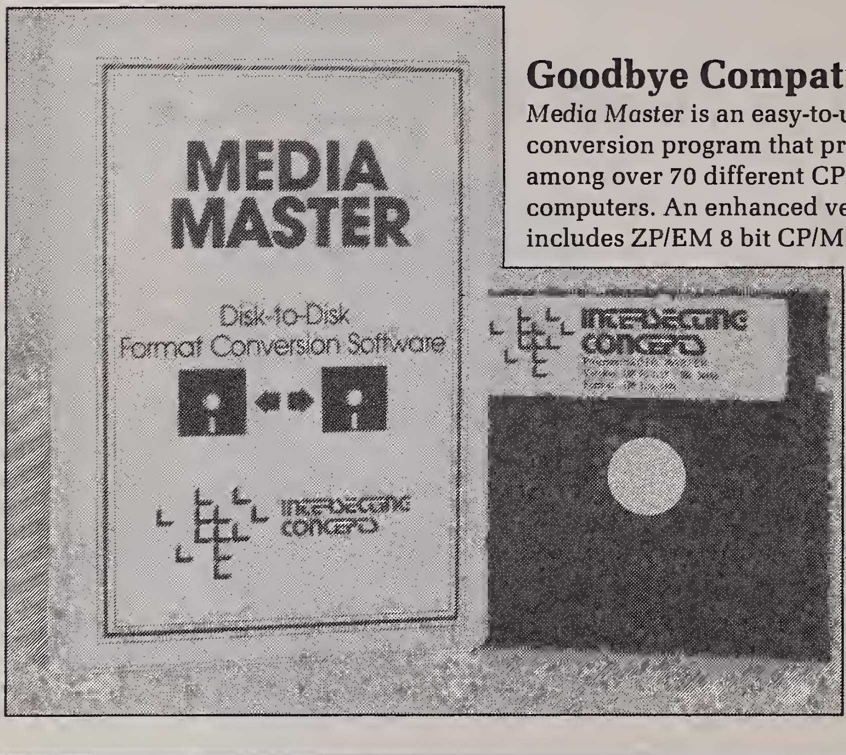

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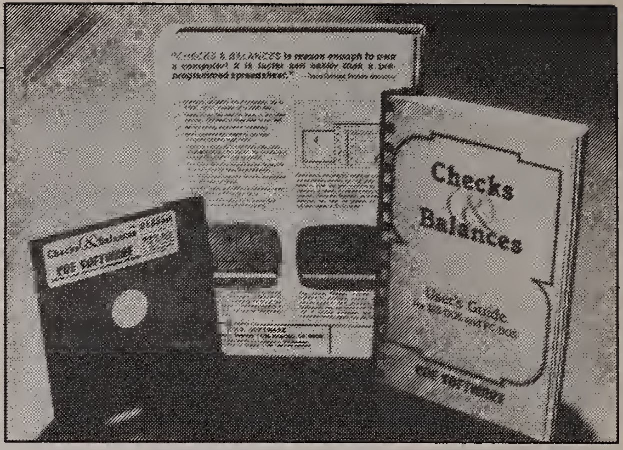

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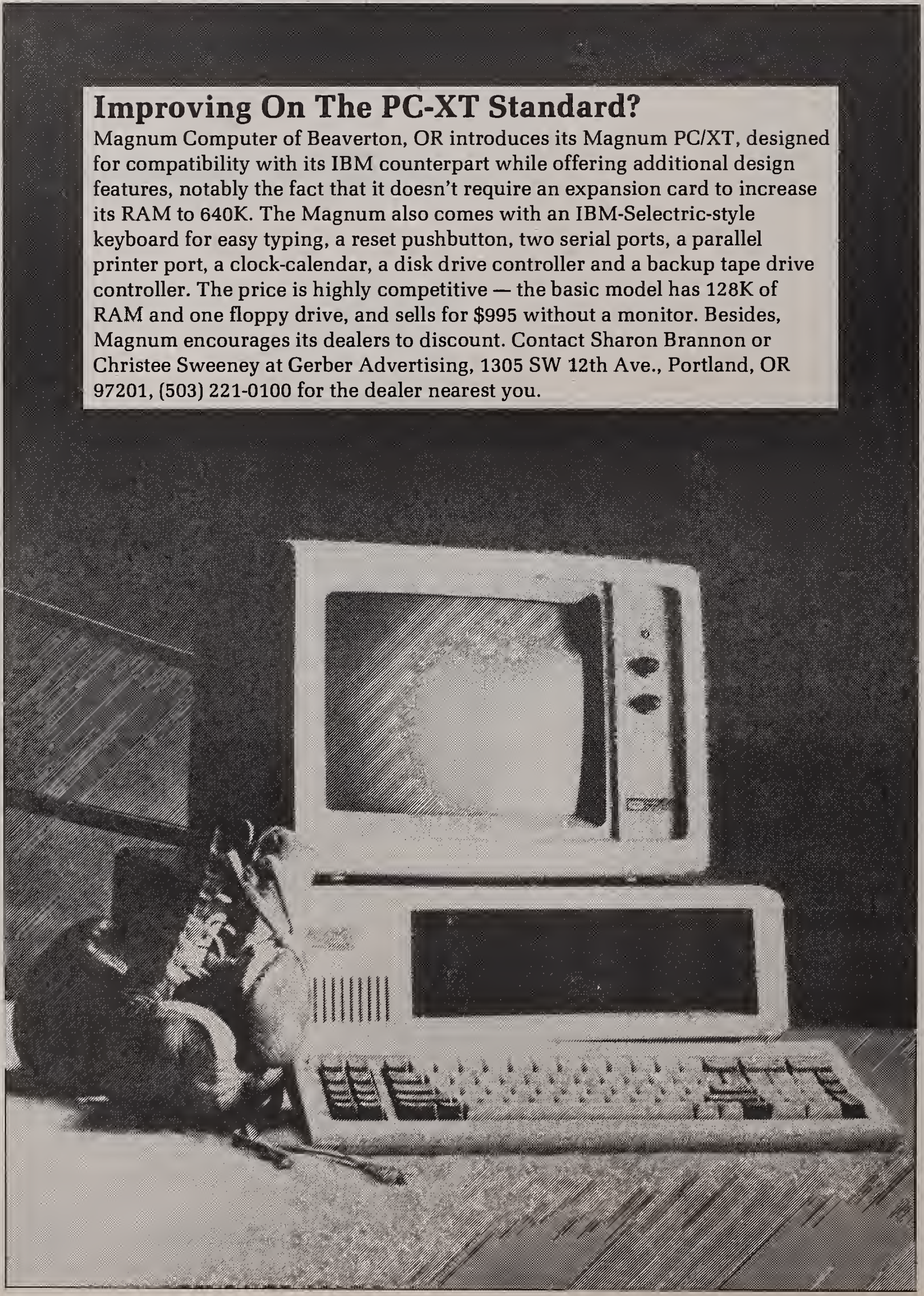

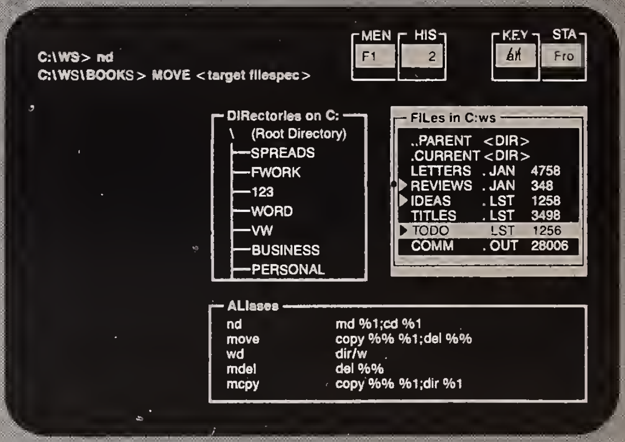

```
C:\WS> nd
C:\WS\BOOKS> MOVE <target filespec>

DIRectories on C:
\   (Root Directory)
 ├─SPREADS
 ├─FWORK
 ├─123
 ├─WORD
 ├─VW
 ├─BUSINESS
 └─PERSONAL

FILes in C:ws
  ..PARENT  <DIR>
  .CURRENT  <DIR>
  LETTERS   . JAN   4758
▶ REVIEWS   . JAN    348
▶ IDEAS     . LST   1258
  TITLES    . LST   3498
▶ TODO       LST    1256
  COMM      . OUT  28006

ALIases
nd          md %1;cd %1
move        copy %% %1;del %%
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mdel        del %%
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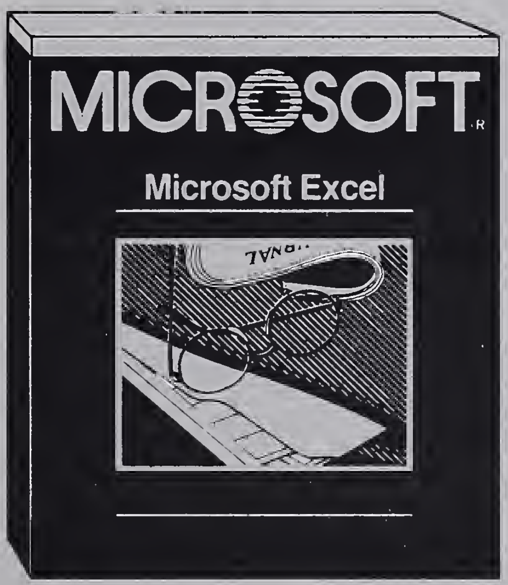

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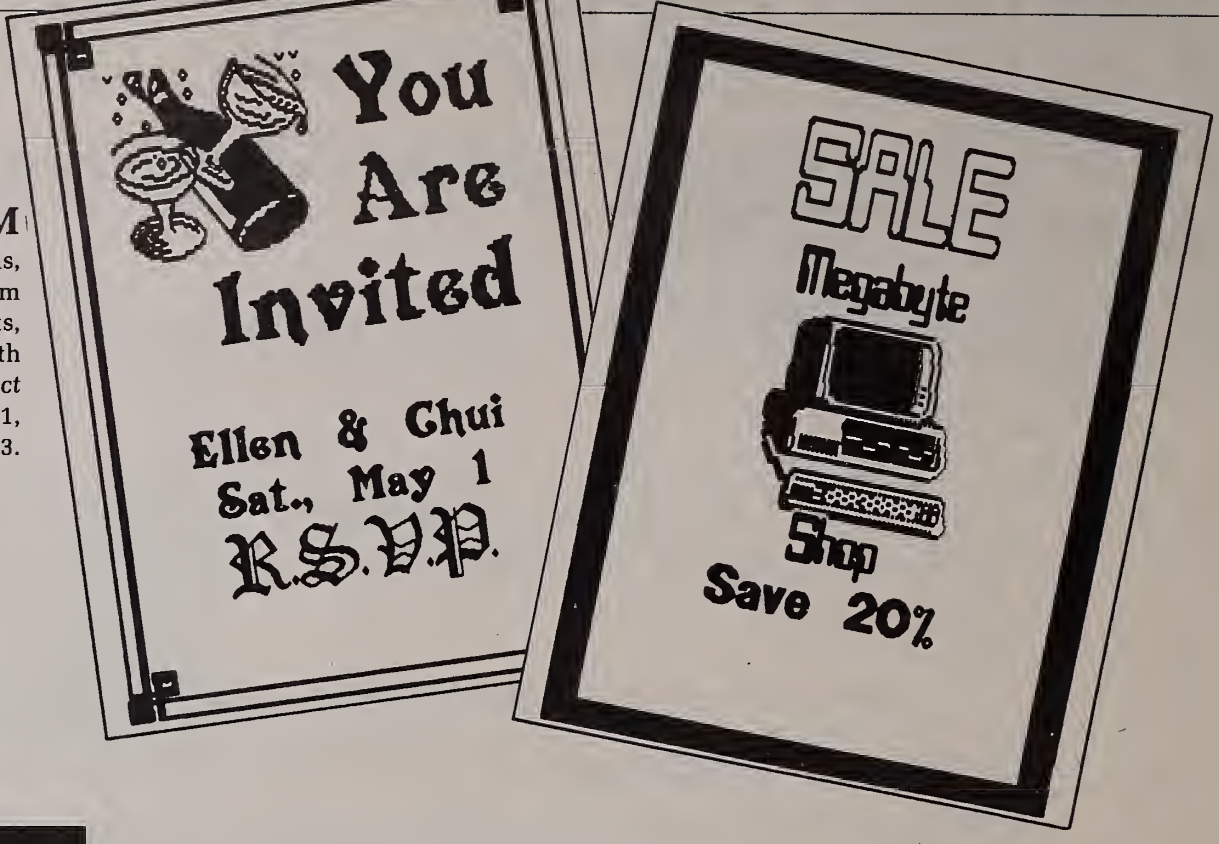
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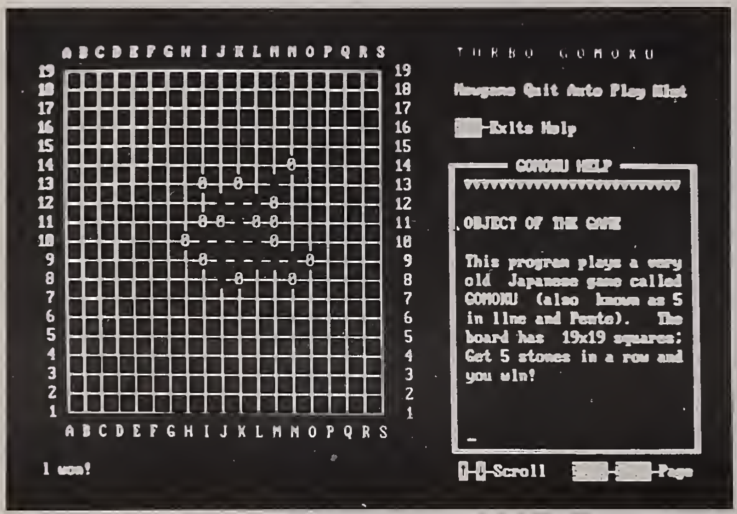
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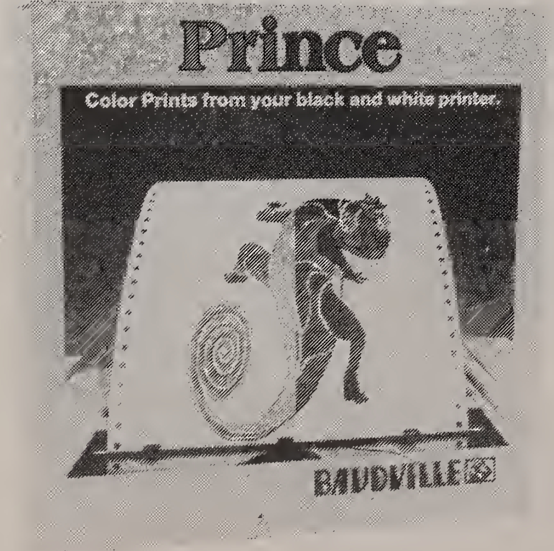
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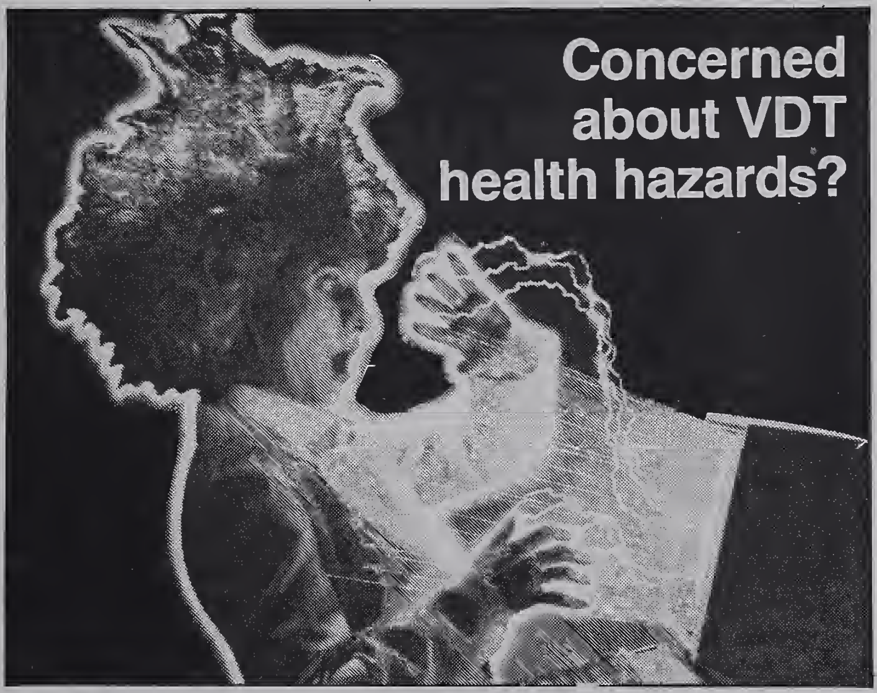
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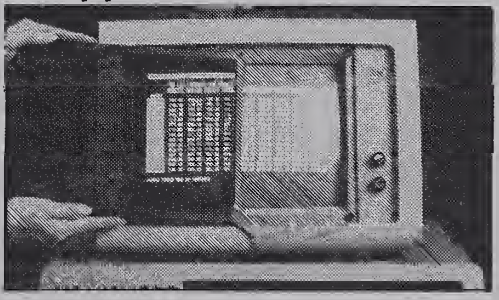

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DATA BASE MANAGEMENT

Designing The Database Structure: 11 Questions

By Bill Amatneek

We should design the structure of a data base file carefully and systematically; it is the basic building block of our database. Productive information retrieval begins with a structure that will serve all our present and future information needs.

The structure of a database is the foundation into which you pour your data; it can be thought of as including the database file name, the number of records, and the last update, but most importantly it contains information about the database Fields (or Columns). Most database management systems (DBM's) ask the user for three pieces of information on each Field being created: the **FIELD NAME** that you wish to call it, the **FIELD TYPE** which designates what kind of data will be entered in that field, and the **FIELD WIDTH,** which represents the greatest number of spaces allowable for data in that field. Numeric fields automatically call for the number of **DECIMAL PLACES** needed. Unfortunately, not all DBM's make all possible Field Types available to the user. The common ones are Character, Numeric, Integer, Real, Date, Time, Currency or Dollar, Boolean or Logical, and Memo.

Before you create a new database or table, you should ask the following **11 Questions** about your file. Doing so will help insure that you have included enough fields in your database. These 11 questions define the relation of the primary field to the database, and of all the other fields to the primary field. If you start adding data to a file and later discover that you have not included a needed field, adding that field can be accomplished without too much difficulty in most DBM's. But adding one piece of data for this field to each record you have already appended can be less than fun.

On the other hand, be careful not to include un-needed fields in your database. The inclusion of fields with data that will never be used or reported on will unnecessarily fatten the database, and increase your data entry time.

WHAT

This is the most important question. The one-word answer to "WHAT is this file about," is THE most important field, the primary field of your database. Another way to look at this question is, "If you could only have one field in your file, WHAT would it be?"

For many applications, two or more fields are needed to answer the question "WHAT." A personnel file may have an entry for the employee's **FIRST NAME, LAST NAME, SOCIAL SECURITY NUMBER** and **EMPLOYEE NUMBER.**

Bill Amatneek is a database consultant and trainer. He will be teaching "Winery Database Management" at U.C. Davis on October 26 – 27, and giving a talk/demonstration on dBASE III compilers at the Marin dBASE Users' Group meeting, Thursday, October 17, 7:30 pm, at Citicorp Savings, in Novato. He can be reached at 415/388-8024.

Sometimes we must decide whether a field which will contain all numbers should be declared Numeric or Character type. Remember that "Numeric" means "number-like," and any field declared Numeric should use its data in a number-like way. This means doing math with the data — adding, subtracting, dividing, multiplying — or using the data to keep count of consecutively numbered items.

A field that held Social Security Numbers, for instance, should not be declared to be Numeric, since you will not be doing math on the data, such as dividing a Social Security Number by 17. On the other hand, Receipt or Invoice Numbers "keep count" of documents for us and so require number-like use of data. They are best kept, with most DBM's, in Integer or Numeric type fields.

	Field Name	Type	Width	Decimals
1	FIRSTNAME	Character	16	0
2	LASTNAME	Character	24	
3	SSNO	Character	11	
4	EMPLNUM	Character	8	
1	ITEM	Character	12	
2	PARTNUM	Character	7	
1	INVOICE	Numeric	6	0
1	RECEIPT	Integer	6	

WHICH

"WHICH" is the question you must ask of your "WHAT" field if the data in the "WHAT" field can be broken down or defined further. Got that? One indication you may need a "WHICH" field is if commas, or spaces between words, appear in some of the data of the "WHAT" field. If some entries in a field called ITEM looked like:

camera, 35mm
8mm camera

you should probably create another field called TYPE to hold the "8mm" and "35mm" data.

	Field Name	Type	Width
2	TYPE	Character	12
2	MODEL	Character	7

HOW MANY

"HOW MANY" means the **QUANTITY** present of the "WHAT" field entry. Quantity could mean quantity-on-hand, quantity-ordered, quantity-backordered, and so on. It could mean you'll need a number of Quantity-type fields. Conversely, if the Quantity is always 1, or always the same, you won't need a Quantity field. A personnel file always has a quantity of 1 person per record, so a Quantity type field would be redundant, and furthermore, wouldn't be needed, either.

This brings us to the famous "Bill's Rule of 9's." (Or maybe it's someone else's rule and it's not so famous after all). We need a consistent method to save off sufficient field and decimal width to handle all possible data which we will have to enter in our numeric type fields.

We do this by writing a 9. on a piece of paper and asking ourselves if our data would ever go higher than 9. If so, we write down a second 9 next to it: 99. Again we ask if our data will go higher than this number: 99. If so, we add a third 9: 999., and repeat this process until we are fairly sure we will never have to input data larger than that number.

We can similarly determine the number of decimal places. Let's say we have decided that our data will never go higher than 999. Now we add a 1 to the Right of the decimal point: 999.1, and ask whether an increment of .1 (or one-tenth), is small enough for our needs. If not, we add a 0 to the right of the decimal: 999.01. But 222 and 1/8 pounds (222.125), for instance, could not be accurately entered if only 2 decimal places had been saved off. We must add another 0 to the right of the decimal point, finally arriving at a decimal number sufficiently small to handle our data: 999.001.

Then we must ask if our data could go negative *and* positive, as in the weighing of inflated and uninflated hot air balloons. If so, we'd have to reserve another space for the + or − sign. Finally we count the spaces we've filled, including one for the decimal place, for a total width of 8, of which 3 are decimal places: ±999.001.

	Field Name	Type	Width	Decimals
3	QUANTITY	Real	4	0
3	UNITS	Integer	4	
3	POUNDS	Numeric	8	3

OF WHAT

Sometimes all the items on your list will not come in the same UNITS or UNIT OF MEASUREMENT. In a supermarket, for instance, the Units of Measurement vary; some items are measured in pounds, some in gallons, some in ounces, and so on. The "OF WHAT" question defines this Unit of Measurement, if it is needed.

It won't be needed if the UNITS is always the same for every record. Under some circumstances more than one "OF WHAT" field might be called for if the items in question are measured in more than one way (by weight AND by volume, for instance). By example:

	Field Name	Type	Width
4	UNITS	Character	2
4	MEAS	Character	10
4	VOLUMEAS	Character	4
5	WEIGHTMEAS	Character	4

AT WHAT RATE

This usually means the "price per unit of measurement," and ties in with the "OF WHAT" or "WHAT" field. It is usually referred to as Unitprice, Unitcost, Salary or Wages. Here are some examples:

	Field Name	Type	Width	Decimals
5	UNITPRICE	Dollar	6	
5	UNITCOST	Currency	6	
5	WAGE1	Numeric	6	2
5	WAGE2	Numeric	6	2

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WHERE

"WHERE" can mean many things. It can mean "Where is this item located?," "Where was this contact initiated?," or, "Where did this transaction take place?" These are usually character fields; sometimes many fields are needed to describe WHERE:

	Field Name	Type	Width
6	ADDRESS1	Character	25
7	ADDRESS2	Character	16
8	CITY	Character	16
9	STATE	Character	2
10	ZIP	Character	5
6	MET_AT	Character	20
6	TO	Character	20
6	DEPT	Character	6
7	AISLE	Character	2
8	ROW	Character	2

WHY

WHY means, "WHY is this entry on the list?"; "Why is this here?"

This could refer to the "credentials" presented which enabled the item or person to get onto the database. Or it could refer to the person who referred the customer, sold the item, or OK'd the item's entry on the list. Try these:

	Field Name	Type	Width	Decimals
7	SALESPERSN	Character	3	
7	REFERDBY	Character	20	
7	CREDENTIAL	Character	15	
7	APPROVEDBY	Character	3	
7	INSPECTOR	Character	2	

WHEN

"WHEN" defines the time frame of an event. Many databases include date data because pinpointing an event in time is usually important. Many DBM's have a Date Type field and date handling abilities; there is at least one notable exception.

Sometimes two or more DATE fields will be needed to pinpoint starting and ending dates. For some applications, the date AND the time will be important. Some DBM's have a time field; other alleged heavy-hitter DBM's do not. Time is often entered in "military" format, using the 24-hour clock:

hh:mm:22 or
hh:mm.

Nine forty one and a half P.M. would be entered as:

21:41:30 or just
21:41

if seconds were not important.

	Field Name	Type	Width
8	DATE	Date	8
8	TIME	Time	
8	INTRODUCED	Date	8
9	ADMITTIME	Character	5
8	HIREDATE	Date	8
9	FIREDATE	Date	8

IF

IF means "IF this item is currently in the database." Time has a way of deleting records from a database even as others are appended. Maybe an inventory item is no longer stocked, or perhaps the only employee who knows how to run the computer has quit. You might not want to entirely remove that item or person from the database. You might want some record of the entry — an emergency phone number perhaps — hanging around.

There are many ways of dealing with this, short of copying such records off to another file. With either of the *dBASE* Bros., we can use the **.DELETE** command to mark records for deletion. Without actually removing those records from the database, the deletion process puts them "out of the way" of our data processing. With *dBASE III*'s **.SET DELETE ON,** we can additionally get these records out of our sight during **LIST**ings and **DISPLAY**s.

We can alternately create a Character or Logical field to hold information regarding the status of that record. These fields might look like this:

	Field Name	Type	Width
9	STATUS	Character	1
9	ONLIST	Logical	1
9	CURRENT	Boolean	1

A *dBASE* command to show records that were currently "on" this database might look something like this:

.LIST FOR status-"C" or
.LIST FOR onlist

This second command, which uses a Logical-type field "onlist," is equivalent to saying "List For onlist = True," where the " = True" part is not stated. The opposite command, to list the record not "on" the database, would be .LIST FOR .NOT. onlist.

IF NOT WHY NOT

This field works with the "IF" field, if an "IF" field is present. The question is: "IF the item is NOT currently on the database, WHY NOT?"

An inventory item may be discontinued; a person may have passed on to that Great Database in the Sky. This will usually be a Character or Memo type field, either long enough to hold some sort of comment or explanation, or short enough to hold a coded reference:

	Field Name	Type	Width
10	REASON	Character	12
10	WHYNOTCODE	Character	1
10	EXPL	Memo	10

WHO

WHO means "WHO entered this data into the list?" If you are the only person who will ever put data into a file, then there is no need to create this kind of field. But if more than one person is going to be doing data entry, this field could come in handy. Data entry errors that are spotted can be traced, and the guilty party ostracized — forced to work on the outskirts of Silicon Valley.

	Field Name	Type	Width
11	INITIALS	Character	3
11	ENTERER	Character	2

In summary, your database may require no fields to answer some of these questions and it may require many fields to answer just one of these questions. I hope the worksheet which follows will be of use to you.

Database name ____________ : ______________________ . ____________

Question	Field Number	Field Name	Type (Character; Logical; Memo; Date; Numeric; Time; Currency Real; Integer)	Width	Decimal Places
WHAT					
WHICH					
HOW MANY					
OF WHICH					
AT WHAT RATE					
WHERE					
WHY					
WHEN					
IF					
IF NOT					
WHY NOT					
WHO					

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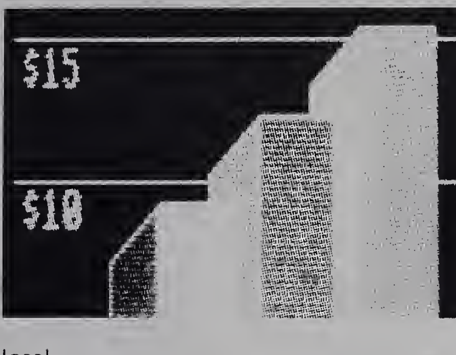

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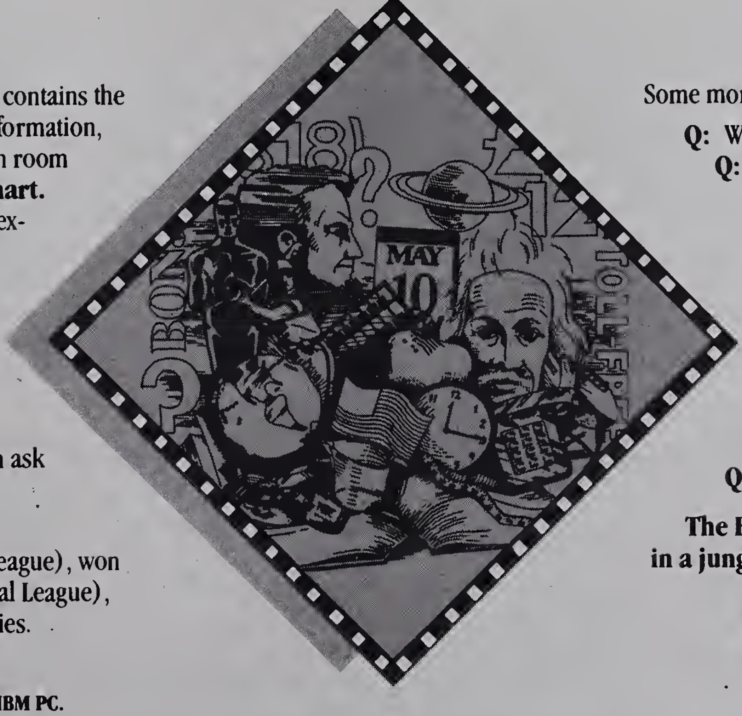

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Q: How many calories are in an apple?
Q: How many Mexican pesos is a US dollar worth?
Q: What is the toll-free number for Apple Computer?
Q: What is the time now in Tokyo?
Q: How do you say "hello" in Japanese?

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COMMODORE

Start-Ups: Riches And Ruin

By Matthew Leeds

A lot that goes on in computing is magical. Most of us never think about what goes on when we turn our computers on. The miracles that modern technology create inside that small box have become commonplace, accepted. The same thing is true of the software that we use. If it's good, we use it without a second thought; if it's bad, we curse the advertising that convinced us to purchase it, or the company that manufactures it. But we rarely think about those who created it, or the effort that went into designing, programming, packaging, and marketing it. This month I'd like to take a look behind the scenes, and show you a few of the back stage players.

The California lottery has started. Many of us hope to win big, and retire for life. It's a fantasy, but it's deeply ingrained into our culture. For many programmers, the software business is seen the same way. Create a dynamite program, sell a few hundred thousand copies, and get rich. And just like the lottery, we only hear about the winners, which, of course, reinforces the fantasy.

In 1983 Martin Marshall quit his job writing high-tech articles for *Electronics* magazine, bought a Commodore 64, and started a software company called Enlightenment, Inc. His product was to be a chess tutorial program. In less than a year he had run through his savings and gone $50,000 in debt. Two loans, one from a friend and one from a bank, tided him over into early 1984. Stock sales generated additional funds, but once again, in March of '85 the money was gone. Then the San Francisco *Chronicle* ran a profile on Enlightenment on the front page of its business section in the middle of March, and 15 new stockholders invested over $100,000. Total cash involvement in the company to date is over $175,000.

The program, *Paul Whitehead Teaches Chess*, is only the first product in a line of chess tutorials. It is unique in that at any point during the tutorial you may opt to play out the board position yourself, without finishing the tutorial. After over two years of work, Martin's efforts are beginning to be rewarded. Enlightenment's programs have reached the retail market and are selling well.

In the process of bringing his program to market, Martin was forced to deal with many sides of the business world: package design, financing, marketing, production, etc. Each step required finding a company to handle that particular need. What printing company should produce the box? Who should design the packaging? For a small start-up these questions were more than just an idle quest for the cheapest vendor; they were the start of a business relationship that could spell the success or failure of his entire effort.

Matthew Leeds is a writer/photographer specializing in high technology. He has been involved with Commodore computers since 1983, and co-produced the Commodore Show in San Francisco.

While looking for disk duplication services, Martin found a company called Memory Chips. Founded by company president Richard Lavender, Memory Chips offered to handle more than just the duplication of program disks. They had the facilities to also assemble the packaging, shrink wrap it, store the finished product, and handle shipping to customers. This kind of service can be essential for start-ups.

Memory Chips, meanwhile, expanded its product line by offering blank disks to the public under the name of "Vanilla Wafers" for their 5¼" disks and "Mouse Bytes" for the 3½" disks. Their disks have been favorably compared to Dysan and Maxell in a major computer magazine's testing. It's important to remember that Memory Chips was a start-up just a few years ago.

Other start-ups are not so lucky. One of the biggest success stories in the software business has also been one of the biggest disasters. HesWare was one of the top suppliers of software to the home market, but ran into trouble in 1984. Cash flow problems left the company with excess inventory and no money to pay bills. After many attempts to find investors or merger candidates, the company finally has had to bootstrap itself back into business. With a dozen loyal staffers, HesWare has re-entered the market. Starting with a few best sellers from its old product line, and a new space station construction kit called *Project: Space Station*, HesWare is back. As Marge Terrian, Marketing Manager says, "rumors of our death have been greatly exaggerated."

The founder of HesWare has a new company, Solid State Software, another start-up. Jay Balakrishnan loves the software business with the dedication of a true believer. His company has two products on the market currently, a *1-2-3* look-alike for the C64, and a word processor for the 128. Both are excellent examples of quality software. The company support for these products is also excellent.

Product support is an important consideration. Sometimes the support can extend into areas that you don't expect. Batteries Included has decided to support those owners of its word processor, *Paperclip*, who have upgraded to the 128 by offering a $20 upgrade of their own. Send them your original program disk and dongle and they will send you a diskette with both the latest C64 and 128 versions of *Paperclip*, plus a dongle that will fit on the 128.

Hardware companies sometimes make mistakes. Witness the hard disk problems IBM AT owners have had. Of course, if you ask IBM about it you will get a blank stare. This kind of non-response can be fatal for a smaller company. Star-Micronics introduced a Commodore compatible printer called the SG-10C a few months ago. A lot of Commodore owners looked forward to it with great expectation, since all other Star products have been tremendous values, and solidly built. The SG-10C was, in a word, a turkey. Functionally it was a MPS-801 with a near letter quality (NLQ) mode. Since 801's are a glut on the market, new and used, and consumers look for better from Star, there were complaints. Lots of complaints. Star-Micronics listened. There will be an up-grade fix for the SG-10C. New ROM's for the printer and instructions on how to install them will be made available to all current owners, and all new printers will have the new ROM's installed at the factory.

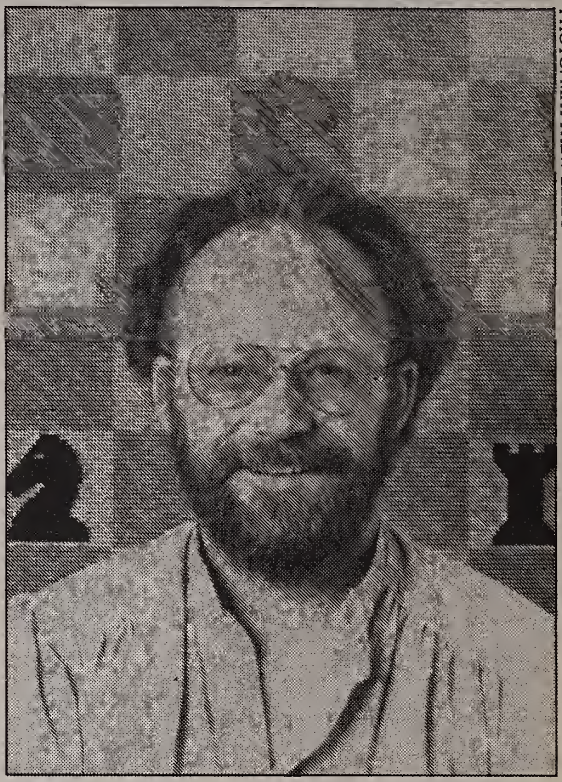
PHOTO: MATTHEW LEEDS

After some perilously rocky months, Martin Marshall of Enlightenment, Inc., is enjoying success with his chess tutorial program.

Commodore has had its share of problems with hardware. The most recent revolves around the 1660 modem. Problems such as speaker buzz, incompatibility with 1650 software, and touch-tone loss are addressed (and solved) in issue #3 of *Input/Output*, Commodore's user group newsletter. Copies should be available from your local user group.

Lastly, for those of you who own 128's, and are running C64 software, there is a way to access the 10-key pad on the 128 in C64 mode. A program to allow this access was published in the Sacramento Commodore Computer Club's newsletter, SC3, of September '85. The author of the article was John F. Zacharias. Copies of the program are in the Public Domain library of the SFCUG, and will most likely be posted on local BBS's. ☐

Martin Marshall
Enlightenment, Inc.
1240 Sanchez Street
San Francisco, CA 94114

Richard Lavender
Memory Chips
927-A Lincoln Avenue
San Rafael, CA 94901

Marge Terrian
HesWare
390 Swift Avenue #14
So. San Francisco, CA
94080

John F. Zacharias SC3
10004 Vanguard Drive
Sacramento, CA 95827

Jay Balakrishnan
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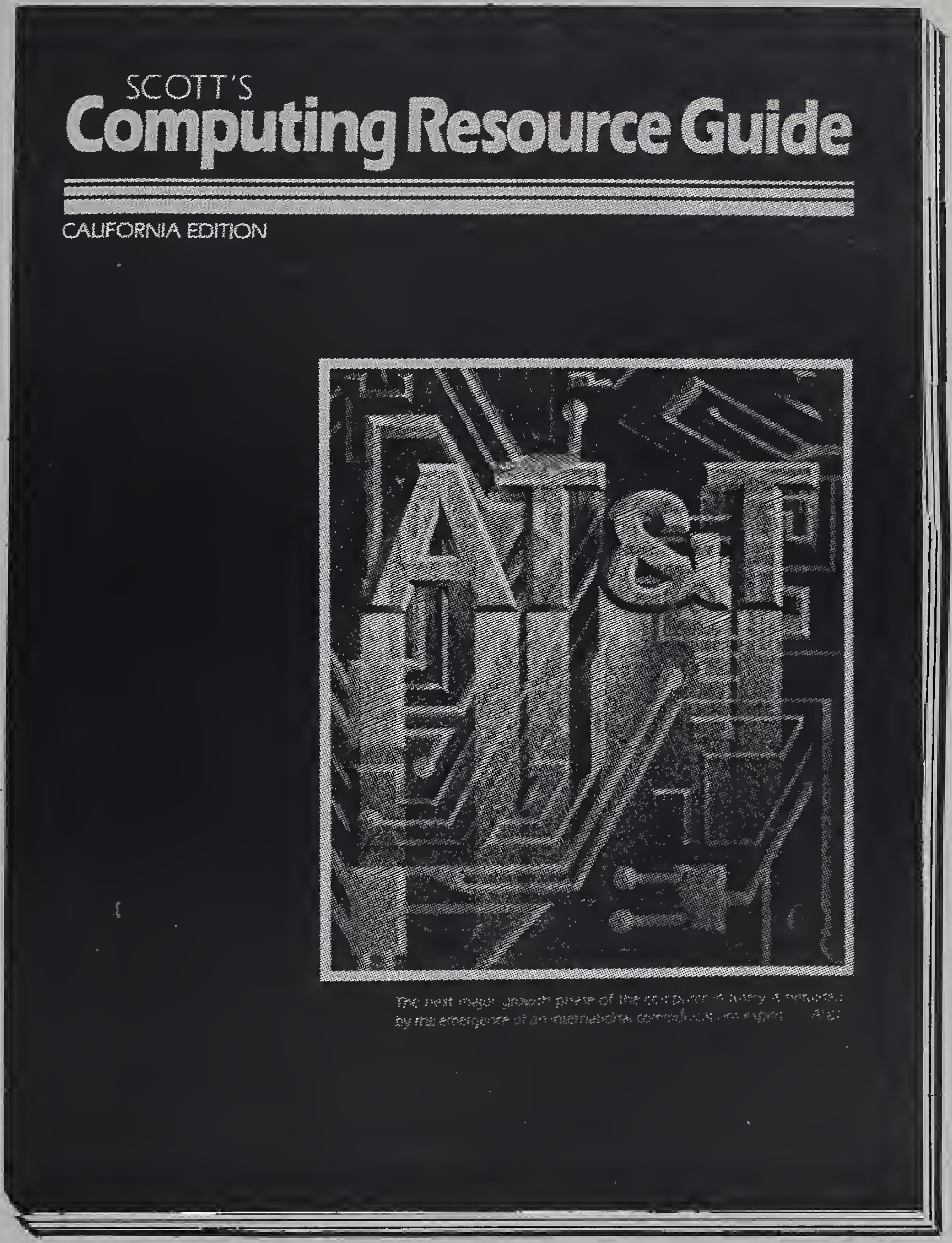

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MACINTOSH

THE COMPLETE MACINTOSH SOURCEBOOK

By Barbara Leone

Yes, ladies and gentlemen, The *Complete Macintosh Sourcebook* is here. Granted, to some extent this book was becoming obsolete as it was being developed, but this is the case of all such books. And even so, it is still very useful. If you use this along with the Redgate publication *Macintosh Buyer's Guide*, (and, of course, **MicroTimes** Magazine) you can feel pretty well informed of the products available for the Macintosh.

The Complete Macintosh Sourcebook, written by Doug Clapp and Pat Ryall, contains descriptions for each of the products it features. The authors have structured the product descriptions in such a way that they sometimes relate their good or bad experiences with the product. Unfortunately, they do not do this for every product described.

This book contains virtually every category of software & services available for the Macintosh. In the chapter on Special Interest Software, the authors admit that they did not include special chapters for Scientific, Home Control and Vertical Market Software, mainly because no or very few products exist in these categories. Still, you may be surprised at what *does* exist. Amazingly enough, there are applications like *The DNA Inspector* (used for analyzing genes) and *DietMac*.

The business section contains descriptions of products for financial management, such as the Quest *Client Write-Up And Small Business System*, to be used for small business accounting. The product descriptions have a retail price listed and are laid out in alphabetical order by company.

When going through *The Complete Macintosh Sourcebook*, I noticed that the authors were very honest about their experiences with the products mentioned. However, there are some inconsistencies in format—in some cases the descriptions include information about manuals and tutorials, and in others these things are never mentioned.

The smallest section of the book is the one on Integrated Software, largely because there are still so few such packages available. This section contains those few programs for the Macintosh that are considered integrated software, like *Jazz, Quartet, MacOffix* and *Ensemble*.

Another chapter talks about Desk Accessories. Some of the best ones mentioned are *ClickArt Effects* by T/Maker Graphics and *The Desk Organizer* by Warner Software. *ClickArt Effects* is designed for *MacPaint* and has outstanding features. I am most impressed by its ability to take a *MacPaint* picture and make perspective changes — stretch it toward the horizon, for instance, or do rotation by degrees. *The Complete Macintosh SourceBook* describes *The Desk Organizer* as "an instant file cabinet, an appointment calendar, an expanded notepad, a telephone dialer, a printer, a visual calculator with paper tape, a clock watcher, and more. The program isn't a true desk accessory; instead, it's a multitude of desk accessories rolled into one application program."

Other chapters include information on Word Processors, Games & Diversions, Educational Software, Personal Finance, Utilities, Graphics, Sound & Animation, Communications Hardware & Software, Hardware and Accessories, Publications, Becoming a Macintosh Developer, Programming Languages, Free (Or Nearly Free) Software, User Groups, Telecommunications Services, Companies, CompuServe Maug Macintosh Directory and Too Late to Integrate (other products from the categories above, which arrived too late for inclusion in their proper chapters). Anyone who is still saying that there isn't any worthwhile software for the Macintosh ought to get a copy of this book. (*The Complete Macintosh Sourcebook*, Info Books, P.O. Box 1018, Santa Monica, CA 90406.) ☐

Barbara Leone owns and operates Microsource Consulting Services in Orinda, California. She works with all sizes of business training and consulting on the Macintosh and IBM personal computers. For more information call: (415) 254-4999.

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The Case For Strategic Planning

By L.K. Engelhart

People who have to operate a business will tell you that theories about how to do it aren't much help. Being closely in touch with what's happening is what works.

As reasonable as this approach to operating a business may be, there are types of changes an operator may contemplate which cannot be carried out successfully simply by making decisions and acting on a day-to-day basis. We are not talking about your ordinary operating level decisions here; some changes need an enterprise-wide adjustment involving the overall goals of the business.

Because of the nature of the change in the business, installing computer systems demands planning on a higher level than most businesses have had to address since start-up.

First, A Little Theory

The way I see it, we make critical decisions about how to act at this moment by comparing two images we have of the future. First, there is the image of the world as it will be if we do nothing at this moment. The second image is of the world as we would like it to be. Producing a world with the qualities we want it to have may require us to act. If those actions are required not only at this moment, but also at specific times in the future, we have a plan.

This type of plan I will refer to as a tactical plan. A strategic plan is somewhat different. Let me refer you back to the second image of the world I mentioned above, the image of the world the way we would like it to be. This image does not occur spontaneously to us; we have to work to get it. Frequently it must be chosen from many possible futures we can envision. And since we intend to invest a good bit of our resources in this future, we do a good bit of agonizing over choosing it. The process we go through to pick the best possible future is called strategic planning.

The Need For Strategy

Your business strategy is a logical relationship between your business and the rest of the world that enables you to make a profit. Obviously, something this important we don't leave up to chance. Although there may be some trial and error involved in finding it, a way to make a profit is the only way we are going to survive and prosper. Learning the ropes, or the logic to profitable operation, may take quite some time, and is frequently the major edge we have.

There seem to be three dimensions to business strategy. One, we need to have intimate, detailed knowledge about the community of which our business is a part. Two, we need to understand the forces at large in our community and the relationships between them. Three, we need to understand how our business relates to the community and its forces. Understanding these three dimensions, we have to find a way, logically, that we can make a profit.

For many businesses, this understanding comes about almost intuitively. I maintain that when a major change is contemplated in business, it should be consciously considered in relation to its impact on this overall strategy. Installing computer systems in a business is a change which I believe calls for such an approach.

Computer Oriented Strategies

There are some rampant misconceptions about the role computers play in modern businesses. This is partly because the role of computers has changed considerably in recent times. At the same time computers have become affordable to smaller businesses, their capabilities as business tools have taken a quantum leap. Many large businesses that have used computers for decades are having difficulty taking advantage of the opportunities offered by the new technology; however, these capabilities are immediately available to businesses that are just beginning to invest in computers.

Computers are no longer just business machines. Our businesses have always had information systems, but the computer technology we have available today makes it possible to install computerized information systems which resemble, in many ways, an organic nervous system. Networks and the potential for distribution of equipment, processing and information as part of a single system create some profit-making opportunities for business.

Up until just a few years ago, computer applications were installed in a business independently of each other. These applications served a specific functional area well, but there was no overall design effort to provide for inter-application sharing of information or, most importantly, to provide decision making information for general management. Many large businesses are now stuck with systems that manage information resources unprofitably and are unable to satisfy many of the information needs of management. Any business can be saddled with the same obsolete system design unless it learns from those who have gone before.

Modern information system professionals treat information as a business resource and plan for integrated applications to support the information needs of the entire enterprise. The modern approach produces a system which is as modular and dynamic as the business itself, because its design is derived from and is driven by the strategic goals and objectives of the business. All of its parts work together, and it is capable of adapting to the current environment because top management sees to it.

The Case For Strategic Planning

You can't buy a system like this off the shelf. It's not the software that makes a system work; it's not the hardware; it's not even the procedures. It is the people who have always and will always make any information system work. Most importantly, management is the essential element in making modern information technology work.

The first thing that has to happen is for the operator of the business to choose the information technology future as the image of what the future "should" be. In many cases, the strategic goals and objectives of the business will have to be restated from their initial form at start-up. An analysis must be done of the potential opportunities offered by information technology which can be applied specifically to this business' strategic goals and objectives. Finally, the operator must decide whether a computer-oriented strategy represents the best possible future for the business.

Even if computer systems are not chosen as the means for supporting the information needs of the business, this strategic plan is essential to any tactical planning the business does to implement its chosen best possible future. In any case, the strategic level effort to define the business' information needs will produce a clear, logical statement of those needs. Any problems with the existing information system will be identified. Future alternative opportunities will have been defined and prioritized for later consideration.

The profitability of any investment in information technology is directly related to the strategic planning done to tailor the technology to a business' strategic goals and objectives. Experience has shown that major benefits result from creation of a high-level design for the system which does not change with lower level changes in implementation priorities and techniques. A side benefit may be the tendency of the business to continue the practice of strategic planning. ☐

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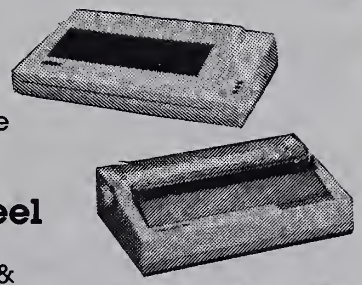

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TELECOMMUNICATIONS

ONLINE FREEBASING

By Brock N. Meeks

It was an embarrassingly small crowd that showed up at the Improv one Monday night to see comic Robin Williams. The crowd was so small that Williams spent the first 15 minutes of his routine musing about crowds—or the lack of them — "So this is comedy hell." Suddenly Williams leapt from the stage, rushed to the front door, shouted "Free cocaine!" — then ducked.

Well, for all you "infomaniacs," I'm opening the door and yelling: "Free information!" We are going to cover some of the nation's best online databases. And they're free.

Without these free sources of information, infomaniacs are forced to:

- Mortgage the house (a second time).
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All this just to get enough money to pay for commercial information systems such as The Source, CompuServe, or Lockheed's ("just sign on the dotted line, Mr. Meeks") DIALOG.

Access to these services can cost anywhere from $6 per hour (oh, so seductive) to $200 an hour (which has tendency to cure an infomaniac in a short — if brutal — time). Help, however, is available. Yes, Virginia, there is still a free lunch; well, almost.

The Semi-Free Lunch

The only cost for these databases is a phone call — which any dedicated telecommunicator will tell you can be substantial. (I still remember the time my phone bill was delivered with complimentary blindfold and cigarette.) So open a buffer, and don't log on until the rates drop (and you wondered why your telecommunicator friends were always busy at night!).

Where I've provided a name and address, you will have to contact the name listed before you can access the system.

Electronic News

Clearpoint International News offers daily transcripts of news monitored from foreign news agencies. This is great for examining how the Brits or the Soviets (yes, Radio Moscow is monitored) are covering an international issue. (An Information Age alternative to Harry Reasoner.) Contact Clearpoint, POB 31577, San Francisco, CA 94131.

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Save The Whales BBS

Greenpeace runs a BBS to handle its information network. Every wonder what your favorite whale watchers were up to? (It's a lot more than tracking Russian whalers.) You can get the full scoop by dialing up (415) 621-5492, 300 baud. Password: chavies.

Handicapped Hackers

Information about the disabled community is online at the Disabled Interest Group Experimental eXchange (DIGEX). This BBS has worked long and hard to become a nationwide clearinghouse of information on any issue regarding the disabled community. A ten meg hard disk holds files on legislative actions, publications, and new technologies for the disabled. Call (619) 454-8078, 1200 baud.

Waste Not, Want Not

The New Jersey Environmental Action Referral Service (NJEARS) is the cooperative network of two BBSs: RecycleNet and Apple to Eden. Both of these boards carry discussions and information about waste management and recycling options. A wide range of environmental issues are handled by online experts. Call (609) 641-9418, 1200 baud. A validated password is needed to post messages, use "feedback" section to apply for one.

Yuppie BBS

For all of you with discretionary income to invest, the Investor's Workshop is a free forum for learning the hows and whys of investing. The board's purpose is to educate beginning and seasoned investors in the stock, bond and commodity markets. It has a database that contains weekly updated advice files from expert stockbrokers, financial planners, and investment bankers. No buying and selling here, which I find comforting; just solid suggestions for getting serious with your money. Call (702) 438-1398, 300/1200 baud.

Make Mine Methanol

The Alternative Fuel Data Bank contains information on alternative fuels. There are bibliographies of relevant publications, synopsis of ongoing research activities, and discussions of the field's "hot" topics. Contact Russell Simkis, Bartelsville Energy Technology Center, POB 1398, Bartelsville, OK 74005. (918) 336-2400.

Node Code

OK, all you junior cryptologists (definitely not a sub-set of infomania), it's time to throw away your decoder rings. A BBS operated by the International Association of Cryptologic Research will more than satisfy your need for information regarding cryptology. The board carries a list of cryptologic conferences around the nation. There are article abstracts from professional journals as well. Call (703) 237-4322, 300/1200 baud, 6:30 p.m. to 7:00 a.m. and 24 hours on weekends. All messages are in uncoded ASCII.

Blast Off BBS

Space buffs take note. NASA's space shuttle program has its own BBS to give you daily information regarding the space shuttle program. GAS-Net (Get Away Special) focuses on discussion of the various experiments to be flown during each mission. Want to fly your own experiment? Here's the registration desk. The board includes all the available slots for flying an experiment over the next two years. In addition, a full roster of planned experiments is listed. There is a conference section where the experimenters hash out potential problems. Even if you're not interested in flying an experiment (which range in cost from $3,000 to $10,000 each) the board is great reading. Call (301) 344-9156, 300 baud.

Head Shrink BBS

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Those boards should keep a hard core infomaniac busy (for a couple hours at least). I think you'll enjoy them.

Did I miss your favorite? (Believe me, this list is far from exhaustive.) I'd like to hear about any of the specialty boards that you frequent (my online therapist tells me it's healthy to exchange such information). You can reach me at **MicroTimes**, or through one of the online addresses I listed in last month's column.

I'm outta here. Just talking about all this free information begins to make my fingertips tingle with excitement (ah Mom, you never told me about this). I'll catch you on the bitstream. ☐

Brock is a San Diego based freelance writer and a hopelessly incurable infomaniac. Contributions for his therapy sessions can be sent to MicroTimes.

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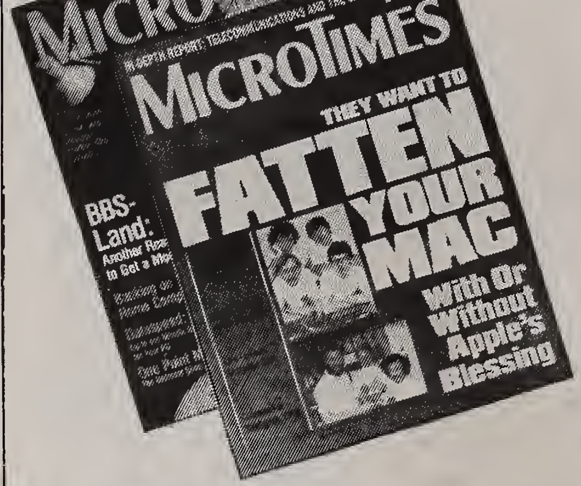

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Bad Sectors And Other Delights

By Robert D. Athey Jr.

In past columns, we've mentioned some public domain software programs that are very useful to the casual computer user. We continue with descriptions of two little, but *very* useful, "free" programs. I recommend both of these for *any* computer user.

The first program is "FINDBAD," which will allow you to recover a disk with a bad sector, so you can keep on using it. "FINDBAD" is a utility which searches a disk for bad sectors and marks them. The program achieves this by naming the bad sectors, just as if they were data files. The new files are named "[BAD]" and listed in the directory in the same manner as if they were full of text for a word processor. When this has been accomplished, the computer does not try to read those sectors (files) in most operations. Certainly your text processing or spreadsheet programs will ignore the new "[BAD]" files, but some disk utilities may try to read them anyway. In that case, a carriage return will start up the operation again as if the bad sector had not been detected.

Not all bad sectors are permanently bad. If you're formatting a new disk, and see a number of bad sectors indicated, try reformatting. Frequently, you'll see the disk has fewer (or none!) on the second try. If that's the case, keep on reformatting until you get no bad sectors, or no change in the bad sectors indicated. If you aren't getting any bad sector messages, go ahead and use the disk with confidence. If you have several bad sectors left, return the disk to the seller for replacement. I format any new disks as soon as I get home with them, so they can be immediately replaced if necessary. This is relatively rare — it's only happened twice in 2½ years.

Now, suppose a disk you've been using for six months suddenly shows "Bad Sector." Even if the book chapter you've been working on for four months is on that disk, don't despair yet. Hit the carriage return and see what happens. Occasionally, the bad sector is temporary, and you'll see a section of text replaced with a screenful or so of one letter. Don't panic! Isolate the new mass of gibberish with a few carriage returns, before and after. Then delete the gibberish and save the file immediately. If you don't get a new "Bad Sector" message, the problem was temporary, and you haven't lost the disk. Look at your backup file to see if the missing sector can just be plugged in. At worst, you may have to input the paragraph or two you lost in gibberish from your hard copy (which, of course, you previously printed so you could edit it while watching the evening news a few days ago).

If you do get the dreaded "Bad Sector" message upon trying to save the file, again hit the carriage return to re-enter the file. Since this is a more serious loss, more drastic measures are needed. Save the file to a new filename, or at least save that portion you have in memory. Then delete the original file by the old filename. Exit from the word processor (or spreadsheet or whatever), and get out "FINDBAD" to isolate the bad sector(s). This insures that the disk will be recovered with as much of the data as possible.

Just in case you missed the implied messages above: BACK UP YOUR IMPORTANT FILES! You never know when the computer gremlins will strike. I've been extremely lucky in that respect, having only two or three bouts with "Bad Sector," but the one I mentioned in an earlier column (losing a spreadsheet for my business that hadn't been backed up in five months) was indeed a trauma. It took me two months to get that straightened out.

The other public domain utility program you may find useful is "UNERASE," which does just that. Say you've inadvertently erased something you want to retrieve, and you know it was somewhere on this disk. Just type in "UNERASE FILENAME.EXT", and the file will reappear (provided, of course, that it was indeed on this disk, *and* that it wasn't overwritten in subsequent usage). You'll also enjoy the computer's response upon a successful unerase.

In case you're wondering where to get public domain software, you have several options. The programs may be copied from a friend or purchased from your local user group library. You may download them from local remote bulletin boards (RBBs). If you want to just buy the disks, there are several stores to serve you, including MicroCornucopia in Bend, Oregon. Public Domain Software Center, located in Vista, California, will even let you rent programs for seven days to try them out.

On a completely different subject, here's another good deal to take advantage of—printer ribbons from American Ink Products in San Francisco. I took the freight elevator up to their fourth-floor facility about a year ago and bought both black and green ribbons for my Prowriter. (Multiple colors are available, but green looks striking on my buff stationery with green letterhead.) At about six dollars, the ribbons represent considerable savings over what you're probably paying; also, AIP will re-ink ribbons for you for about three dollars. In fact, you may simply want to trade your de-inked ribbon for one they have already re-inked. AIP is located at 527 Howard in San Francisco; parking may be iffy, especially at near-rush hour. I walk south on New Montgomery from the Montgomery/Market BART station to Howard, and west about half a block or less — a total of four or five bocks. The friendly greeting you get as you raise the gate to get off the freight elevator, and the instant scurry to find your ribbons, make the trip a reward. AIP also offers mail-order service. ☐

Bob Athey has over 20 years of experience working on computers and runs his own company on chemical consulting and contract research. He can be reached through MicroTimes or at (415) 526-3541.

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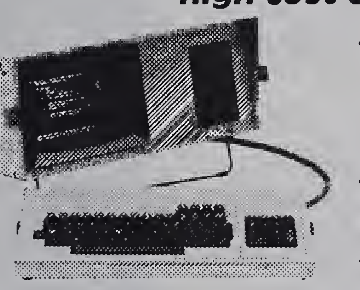

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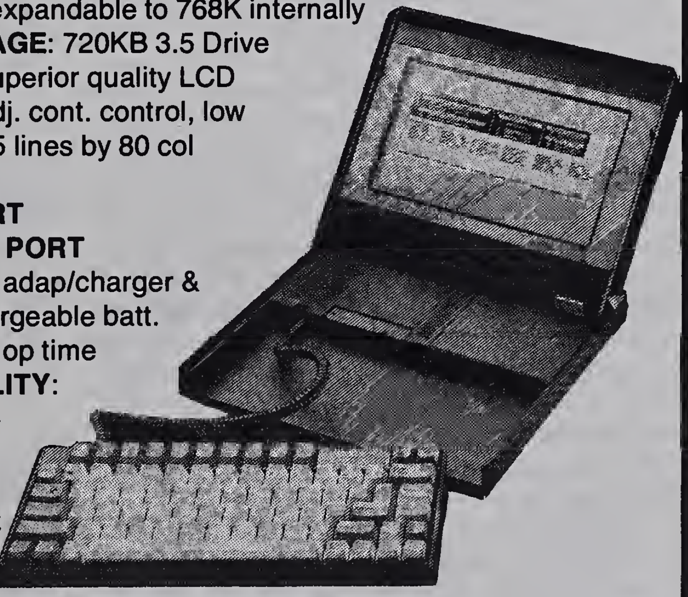

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MANAGEMENT

The HouseKeeper

Published by: *Aegis Development Inc.*
For: *Macintosh (128k minimum)*
Suggested retail: *$69.95*
Reviewed by: *Ken Goehner*

Ever since the release of the Macintosh, there has been a running debate over whether Mac is a home or a business machine. A point that seems to have eluded parties on either side of the discussion is that these days running a home, particularly a household that can afford a Mac in the first place, is a business in and of itself. And one of the key parts of any business is knowing what you have, where it is, how much it's worth, and who to turn to if it breaks or disappears.

To address this part of the business of living, Aegis Development, Inc. has created *The HouseKeeper* — an easy-to-use, pre-formatted, self cross-indexing inventory system for the home. Its primary purpose is to keep track of the vital information on physical household possessions and to aid in preparing lists for police reports and insurance agencies in the event of fire, theft, or loss. It does this and several other things very well.

HouseKeeper operates on a very intuitive level: on the top of the screen is the Menu Bar which features the familiar Apple Icon, File, and Edit options. There are also Chart, Report, and Options menus. I'll cover Report and Chart later. Under Options the important listings are Help and Insurance Info. Help is well written and self explanatory. Insurance Info is the space where you put your name and address of the property that you wish to cover in this file. The page is arrayed like a notepad with a dogear in the lower left corner. When you are done filling in your information, click on the dogear and there will appear a space for entering in information on your insurance company (address, phone, policy number, etc.). There are three pages for insurance companies, each assigned a number. These are important for keeping track of what property is covered by what company as you enter data into your file (if the item or property is uninsured, the default value is zero). Once you have entered this data you will not have to use this function again unless you change companies.

On the bottom of the screen are ten icons, or pictures, which represent nine different categories of household possessions and an overview that lists all properties entered into the program. The categories are: AUTO, JEWELRY, ART, TOOLS, RECORDINGS, ELECTRICAL, CLOTHING, FURNITURE, MISCELLANEOUS, and the entire HOUSEHOLD. At the top of the screen under the Menu Bar is the Data Entry Section. In the right and left top corners of this section the icon of the category selected is displayed, along with eleven Data Entry boxes. The boxes allow you to record the Item, Model, Make, Cost, Serial Number, Quantity, Cost, Invoice Number, Date of Purchase, Insurance (by number 0–3), Comments, and the Room (location of Item). To go from one box to another, you simply hit Return after entering the information. If you have no data for a given box, the program will assign a default value to that space; i.e. hitting return in the Date box will automatically cause today's date to appear, Cost will be entered as 0, etcetera.

Below the Data Entry boxes, but still in the Data Entry Section, are five "buttons" — Delete, Sort, Clear, Find, and Save. Once you have filled out the boxes to your satisfaction (the values entered can always be changed later), you simply click on the Save button, and the Item, Model, Make, and Room appear in the Scroll Box below. The boxes all empty themselves, making way for the next entry. If you decide not to save the information, click on Clear, and the boxes will again empty themselves, but no information will be entered into the Scroll Box.

HOUSEKEEPER
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***The HouseKeeper* allows you to keep a complete inventory of your possessions for insurance purposes.**

The Scroll Box itself only shows eight items at a time, but as the name implies, it can be scrolled up and down by clicking on the arrows on the right side of the box (unlike most scroll bars, there is no slide box between the arrows). In order to retrieve all the information on a given item, simply move the mouse into the text section of the Scroll Box. The arrow will turn into a hand with a pointing finger, and when you point at the item you want, click the mouse button and the information will appear in the Data Entry section. From there you can change the data, or delete the item by clicking on the Delete button.

While in the Scroll Box, you can also mark items by putting checkmarks next to them. Once you move the hand to the left of all the text, it becomes a pencil. A checkmark is entered by clicking next to the appropriate item; it will appear in the upper right corner of the Data Entry section when information is called up on that particular item. This is especially useful for marking a group of items of special significance, i.e. stolen property, for a printout. Once an item is marked, you can get an on-screen list of all those items marked in any or all categories by clicking on the little square in the upper left corner of the Scroll Box (in other programs this is normally the "close box"). You can also list checked items by insurance company, but that list will only appear on a printout as accessed through the Report menu. The printout will not only list the items and their characteristics, but will ask for a title, print that at the top of the form, then your address, then the items, then the address etc. of the recipient of the list, and then a running total of the amounts listed at the bottom of each page.

There are two other ways of summoning up the information you may want on a given item or group of items. First, you can sort by specific entry by clicking on a Data Entry box, i.e., Cost, and then clicking on the Sort button. Everything will then be sorted by its ascribed value. Or you can invoke the Find button. Simply go to a Data Entry box, i.e., Item, and type in the item that you want. Then select the Find Button and all the items with that name will appear in the Scroll Box. You do not need to type in full names either. By entering "B," for example, the program will give you a list of all those things starting with "B."

There is also a Chart function that features two kinds of graphic breakdowns of your worldly possessions. First is the Pie Chart that breaks down your relative investments in terms of gross dollar amounts for the nine categories into which you have entered costs per item. Second is a 3-D Chart that regresses the proportional dollar amounts per category against the insurance companies (or lack thereof) that are covering your goodies.

The number of items that can be listed is limited strictly by the amount of disk space available. On the master disk — the one with the *HouseKeeper* program and the Apple systems folder on it, there's room for about 500 entries. A blank formatted disk has room for about 2000 entries, and a 20 megabyte hard disk can probably store enough data to keep Croesus himself satisfied. Because of the nature of this program, Aegis strongly advises that you keep a backup copy of your data (hardcopy and disk) in a safety deposit box. They also strongly recommend that you send in your warranty card. Upon receiving the card, they will send you a backup copy of *HouseKeeper* and keep you apprised of any new developments in the software package. In the event that the software is stolen or destroyed in fire, Aegis will be glad to send you a new package free of charge upon receipt of proof of purchase and a police report.

All in all, if you can afford to need a program like this, this is a program you can't afford to be without. (*HouseKeeper*, Aegis Development, Inc., 2210 Wilshire Blvd., Suite 277, Santa Monica, CA 90403, (213) 306-0735.)

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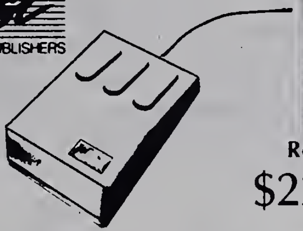

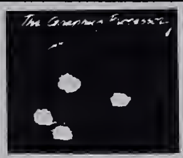

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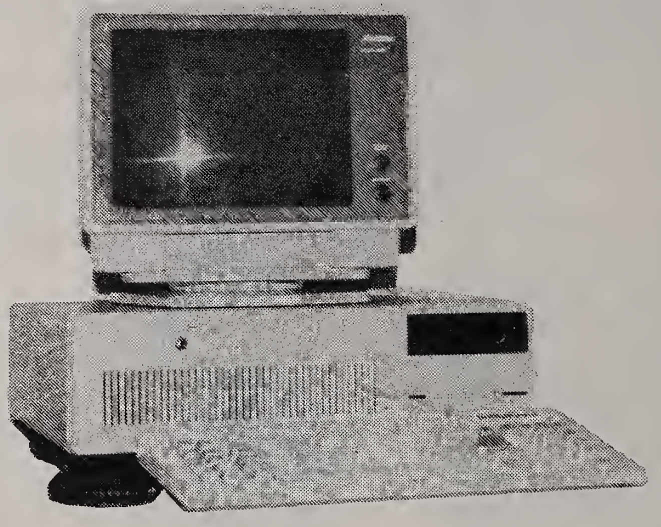

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this information into an equation, solving the equation, and finally stating the result in a way that answers the original question. Human tutors with the time and patience to do this are scarce. Fortunately, you can now find one on a disk for your school's Apple computer.

For the last four years, Microcomputer Workshop Courseware, a little outfit just north of New York City, has been publishing unusually fine math programs for a variety of personal computers. The series on Word Problems is particularly good, and badly needed. The programs ask for the learner's name, and provide constant encouragement ("excellent!" "exactly right!" "you got it!"). This is a simple gimmick, but it works. The typefaces and limited graphics are clear and attractive. The error trapping is superb. These programs will not let you fail. Errors are not just caught; you are led back to the exact information needed for understanding. A printer output feature makes it possible to dump out a complete error analysis for each completed problem, so that a busy teacher can see just where a particular student is weak.

The physical package is simple and functional: a small reinforced vinyl folder with a pocket for the disk (and free backup copy!) and a 12–16 page user guide. A collect phone number for support is provided.

The programs are copy protected, but replacement disks are free — a backup policy more publishers should imitate. The program provides its own on-line instructions and even the youngest learners should have no difficulty once they have overcome the "keyboard barrier." Nobody is born knowing how to use a keyboard, and the simple mechanics of entering numbers and letters is a major obstacle to computer learning for many people. I would recommend using these programs with a pocket calculator at hand, unless the learner is solid in arithmetic.

Algebra Word Problems is menu-driven. A good variety of problem types is presented, enough to keep the learner from becoming bored too rapidly. The program will accept any arithmetically correct expression of an equation, but may rearrange the learner's equation into a simpler form.

Educational software is not magic. An unmotivated, confused or severely demoralized learner can work through any program listlessly punching keys, and still fail the exam, because he or she has not internalized the material. The publishers of *Algebra Word Problems* insist that the programs "should be used in conjunction with classroom lessons and textbook readings. Teacher and student should use the error analysis and program feedback to assess the student's strengths and weaknesses and collaborate in developing an individualized strategy . . ."

I would recommend this series, however, not only for young learners struggling to master algebra for the first time, but also for adults who need to review this anxiety-ridden subject in preparation for an exam (like the GRE) or for further work in math.

Good educational software does not need bells, whistles and flashing lights—in fact the gimmicks can be a distraction for the learner and the software author. Effective courseware is usually the product of collaboration between teachers who understand the sources of the learner's frustration and confusion, and programmers who know the capabilities and limitations of their machines. The folks at Microcomputer Workshops Courseware seem to have solved this equation.

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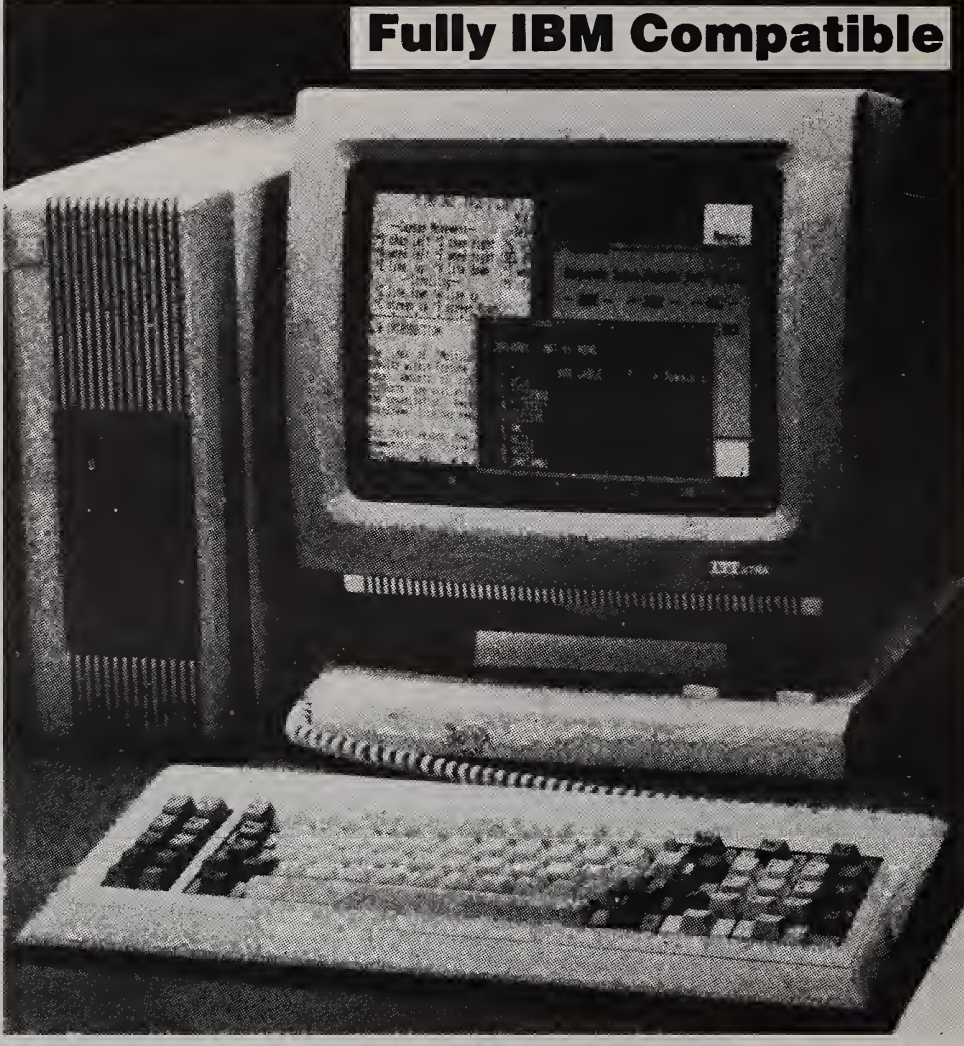

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GAME SOFTWARE

Wilderness

A Survival Adventure

Developed by: *Dr. Wesley Huntress*
Designed by: *Charles Kohlhase*
Published by: *Electric Transit*
Distributed by: *Electronic Arts*
List Price: *$45.00*
For: *all Apple II computers;* color monitor recommended
Reviewed by: *Mike Markowitz*

Wilderness begins where my adventures with *Flight Simulator* usually end—with a plane crash:

> WELCOME TO WILDERNESS. YOU ARE THE SOLE SURVIVOR OF AN AIRPLANE CRASH IN THE SIERRA NEVADA, USA NEAR 38 DEGREES LATITUDE. THE TERRAIN IS VARIED WITH OCCASIONAL LAKES AND RIVERS. THE TIME IS 7:00 AM ON MAY 6. YOU HAVE NOT BEEN INJURED IN THE CRASH.

To survive this interactive adventure, you must reach the ranger station marked on your topographic map, somewhere in a 90- by 67-mile grid. But *Wilderness* is more than just a "hike simulator." It uses some highly sophisticated models of human endurance, nutrition and response to thermal stress. At any point, the terrain you see corresponds to your current position on the map. This neat trick requires its own operating system, trademarked under the name "Pangraphics." You can actually do a 360 degree slow "pan" to left or right and watch the terrain picture scroll. The effect is not perfectly smooth, and at the resolution of the Apple graphics screen the picture is somewhat stylized, but it is better than I have seen on some multi-million dollar military simulators.

The player can toggle among six different displays in the *Wilderness* system:

> VIEW gives your current field of vision, usually mountains, trees and sky, with the occasional rattlesnake or cougar.
>
> TOPO gives a display of your map, which can be enlarged for a closer look at smaller sectors.
>
> STATUS gives a full weather report and a rundown on your state of health (energy, hunger, thirst, injuries or illness).
>
> INVENTORY is a familiar function in all adventure games; it provides a list of everything you are carrying, wearing or using. Food and water are measured in ounces. There are realistic limits on the weight and volume of stuff you can haul around these mountains.
>
> HELP is a last resort. At the cost of some points it can give you context-sensitive advice on the direction to follow or the most urgent immediate action required to survive.

Wilderness recognizes a 300-word vocabulary, but you are limited to simple verb-object declarations: USE AXE/MAKE RAFT/CROSS WATER. In the basic adventure, the player's main problems are land navigation and menu planning. (Hint: eat the most perishable food items first; save those candy bars and raisins for when the going gets tough!) The system will not let you hike off the edge of the map; you have to take another direction.

A great deal of flexibility is designed into the system. There is a "Lost City" scenario for Indiana Jones fans, and options to start the adventure at any season or time of day. You can select a "Research Mode" that makes you immune to the effects of hunger, exhaustion or injury. You can enter your own vital statistics (sex, weight, height, build, age, and resting pulse rate) and the system will realistically model your endurance and response

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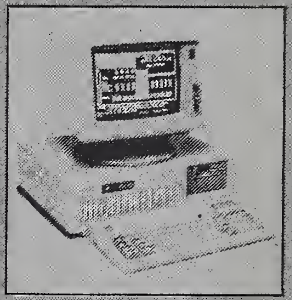

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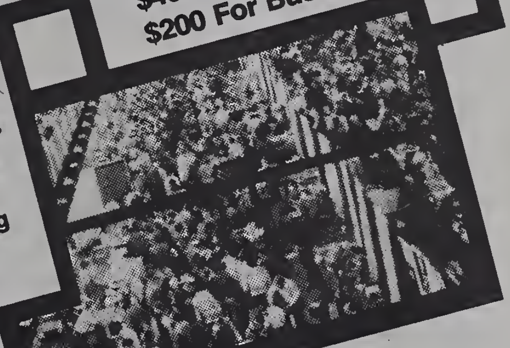

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GAME SOFTWARE

Wilderness is a sophisticated adventure game.

to environmental stress. You can even have the program generate a new TOPO map, varying the level of difficulty.

Documentation is excellent, including a hard-backed spiral-bound 115-page book (based in part on Air Force survival manuals) and a double-sided quick reference card, containing everything you need to get started. The package also includes an order blank for additional disks containing adventures in Bolivia, British Columbia, Burma, Chile and New Guinea at $19.95 each (or $34.95 for all five).

Chapters in the manual cover navigation, making camp, food and water, health and first aid, wildlife (leave it alone!) and future journeys (those five other countries). A complete vocabulary list is included as a priceless aid to the serious player, and there are some hints for using *Wilderness* in the classroom, if your school curriculum happens to include "the skills and problem solving techniques needed to survive in hostile alpine and tropical environments." A disclaimer on the back of the title page warns that *Wilderness* "is not intended as an exhaustive reference for identifying toxic plants or for preventing or treating injuries and illnesses," so the publisher assumes no liability for any mishaps.

Like most good adventure games, *Wilderness* allows you to save an adventure in progress to any formatted blank disk, and resume later from the same point. The system only recognizes one disk drive, so a certain amount of disk swapping is required. The system disk, which uses both sides, is not write-protected on either side, since the system is constantly updating information stored on the disk. This is, unfortunately, the only way to run such a complex simulation on a machine with only 48K of RAM.

There is no option to dump information to a printer. Strictly speaking, this is not essential to a good adventure game, but it would be handy to have a hard-copy of the map or the inventory list.

I hardly qualify as a survival expert, but it appears to me that the mechanics of getting wet and staying dry are oversimplified in *Wilderness*. The system allows you to swim long distances with full clothing and pack, something even Rambo would find quite difficult.

A phone number for product support is given in the manual. Back-up disks are provided to registered owners for a hefty $12. *Wilderness* is an impressive and highly professional product. It will appeal to adventure gamers, survivalists, Sierra Clubbers and gamers who are tired of crashing *Flight Simulator*. The team that created this richly detailed simulation deserves a more powerful microcomputer with lots of memory, a faster processor and first-class graphics to show off their talents. This would be a great conversion for the Atari ST or Commodore Amiga. (Electric Transit, 501 Marin St., Thousand Oaks, CA 91360.)

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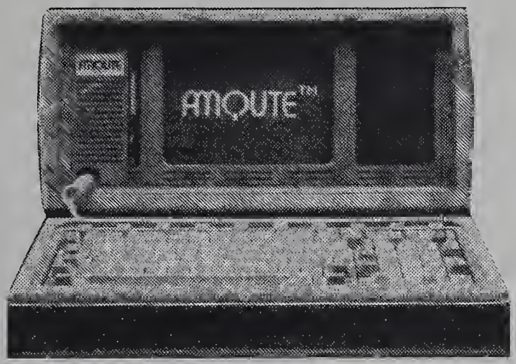

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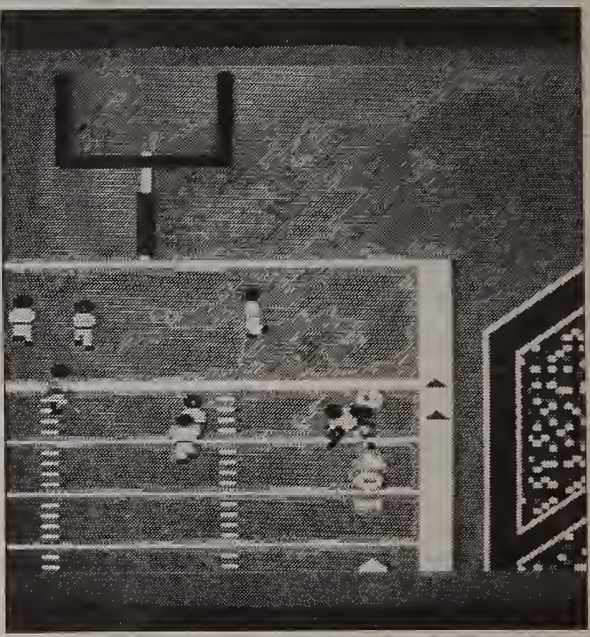

On-Field Football is a four-on-four game with the essence of real football.

On-Field Football

Published by: *Gamestar*
For: Commodore 64
Suggested retail: *$29.95*
Reviewed by: *Matthew Leeds*

There's a wide variety of games out there for computers. Some are action shoot-'em-ups, others are all text adventures. Some require no study to start playing, and with others the documentation seems to be written in another language. Occasionally I get to try one that has a good mix between action and strategy.

I've never played professional football, and I watch maybe two or three games on TV a year, so I'm not what you would call an expert on calling plays. I was happy to find diagrams in the back of the manual for *On-Field Football* that explained what each play looked like, and the position of each player on the field. When I've played football with friends, we just pushed, shoved, and threw the ball. After six or seven hours of playing on the computer, I've learned several plays that just might win us the case of beer next time.

On-Field Football is a four-on-four game with the essence of real football. You get an official playbook with scouting reports on your offensive players. You can choose your quarterback, wide receiver, and tight end. Once play starts, you also choose your offensive formation, and call your play, depending on the formation you've chosen. There is also an audible option. Running plays include screens, options, laterals, and sweeps. Pass plays include hooks, slants, posts, flies, flags, and ins/outs. The defense has to decide between pass coverages and line coverages. The free safety is joystick-controlled, and you can position him anywhere on the field, or blitz.

When you play it's important to keep in mind the relative strengths and weaknesses of your key players. You need to develop a playing strategy, and mix up the plays. If you play against the computer, it will vary its skill level depending on how well you play.

I enjoyed playing *On-Field Football*. It took me a while to get the hang of calling every play by moving the joystick to a different position, and occasionally I left my quarterback without any coverage, but I quickly got the hang of it. If you like playing football, I'd recommend giving this one a try.

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BOOKS

The Skeptical Consumer's Guide To Used Computers

By: *Ed Kahn and Charles Seiter*
Published by: Ten Speed Press
Price: *$9.95*
Reviewed by: *Mary Eisenhart*

"Our purpose," say the authors, "is to help the novice enter the world of computing as painlessly as possible." If you're a neophyte buyer, this book's for you.

Though it's not a sentiment you're likely to hear voiced at your local dealer's establishment, the authors maintain that the first-time computer buyer should be looking for the minimal equipment to satisfy his immediate needs, not the perfect dream machine. Too often, they say, the would-be user is hornswoggled into buying an intimidating array of expensive gadgets that he could do perfectly well without, and which serve mainly to confuse him. If you're just getting started, the authors advise, look for a simple setup with the computer itself, a monitor and printer. Having bought and learned the workings of a simple used system, you'll be in a much better position to define your real wants and needs for your second purchase without haveing wasted too much money. Remember, the authors point out, "the technology of computer systems is moving so rapidly that any system you buy today will be outdated in five years, and probably much less. . .Imagine what features you would want today if you had bought any state-of-the-art computer three years ago."

Having defined this major premise, and backed it up with the assertion that "new stuff is for chumps," the authors embark upon some discussion of the basics: hardware, software, and the potential problems of getting service. They stress the importance of first finding the software that does what you need, then buying the hardware that will run it. (In case you don't know what kind of software will do what you need, they also give a brief summary of various applications—word processors, data base managers, spreadsheets and the like.)

Most of the book is devoted to discussing the pros and cons of various machines, from Actrix to Zorba. There is a rudimentary chart at the end of each section on the most common types of machine, rating each according to Safety in Numbers (if there are a million machines out there just like yours, you're not likely to have much of a problem getting competent service, among other things), Software (i.e. how much is there that runs on the machine), Value, and Overall merit; however, what you get from this book is not a lot of quantified gobbledegook. What you do get is the kind of opinionated, born-of-long-experience scuttlebutt that you'd have to spend a couple of years hanging out at the user groups to pick up. You might not always agree with it, or find it applicable to your situation, but the authors are great at dispensing the kind of advice you're not likely to get from salesmen, which makes this book as useful to the new computer buyer as to the used machine buyer it ostensibly addresses.

Even if you're perfectly satisfied with the computer you've got, or if you haven't the slightest interest in buying one, the book is worth reading just for the instructive historical anecdotes and the writers' style and attitude—populist, irreverent and reminiscent of a Berkeley P. G. Wodehouse. The inherent risk in putting out a book of this

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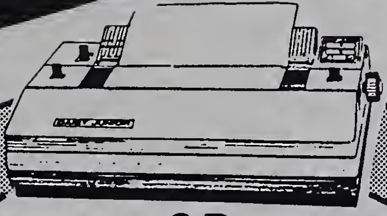

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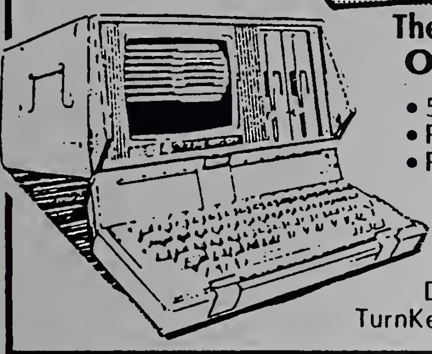

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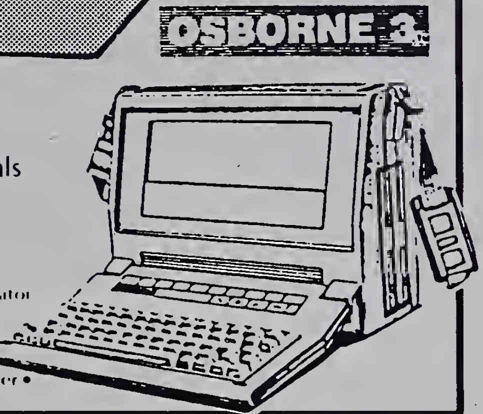

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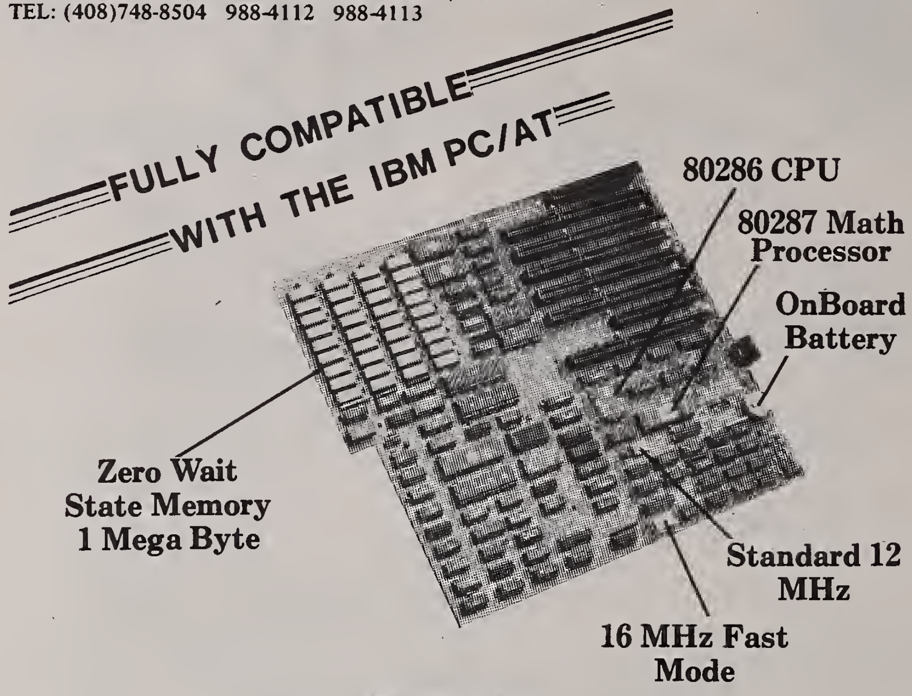

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sort is that some of its information will be obsolete practically before it hits the shelves, since products appear, disappear and change overnight. This book was printed earlier this year, and the sections on Macintosh and the PCjr are already dated, though still useful in terms of general information. By the same token, machines like the Amiga and the Atari 520ST aren't even mentioned, though it's likely to be awhile before they turn up on the used market anyway. With that inevitable limitation in mind, this book is a gem and likely to save its readers headaches and bucks. (Ten Speed Press, P.O. Box 9407, Berkeley, CA 94707.)

The *My Child's Destiny Catalog* is a valuable resource for the parent in search of educational software.

My Child's Destiny
Educational Software Catalog

Published by: *My Child's Destiny, P.O. Box 7349, San Francisco, CA 94120*
Reviewed by: *Mike Markowitz*

This attractive mail order catalog is aimed at the upscale yuppie parent. Everything listed is of the highest quality and utility, carefully selected and thoughtfully evaluated.

The cover photo is one of those mythic images that make mass-marketers drool: a cute kid, his eyes rapt with ecstatic wonder, sits before an Apple, while mother hovers supportively over his shoulder. We do not know what they see on the screen, but somehow we sense that it is not SYNTAX ERROR or FOR WITHOUT NEXT AT 1170. For the 1980s, The Parent, Kid and Computer is becoming an emotional icon.

Products for the Apple, IBM PC and Commodore 64 are included. Buyers can usually get better deals than the list prices given, but this is a "value-added" retailer: custom-made "parent guides" are included for many items, with suggestions on ways to "enhance the skill taught by the program." All products in the catalog have been evaluated by educational psychologist Dr. Vicki Casella, who "selects only those that utilize sound educational principles, provide input from a consistent development stage or allow user-directed goals, are free of sexual, racial or other unfair stereotyping, and are fun and interesting to do." Programs with "unwarranted violence" have also been screened out.

Products that meet these high standards include several versions of Logo, the classic *Rocky's Boots*, *Math Blaster* and *Word Attack*, *Print Shop*, and such hardware as the Koala Pad and Muppet Learning Keys. There is also a line of quality oak-finished computer furniture.

My Child's Destiny takes mail orders, or phone-ins on an 800- number. There is also a store in San Francisco, at 70 Grant Avenue. If L.L. Bean sold software, this is the sort of catalog they would put out. We can highly recommend it for parents, teachers and upscale yuppie kids.

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USER GROUP NETWORK

By Mary Eisenhart

Our own **Bob Athey** and I braved the notorious Nimitz Freeway last month to visit the monthly convocation of the **SCKUG (Santa Cruz Kaypro Users Group)** at the kind invitation of **Dave Kirk.** While Dave hastened to explain that attendance was a little sparse because school hadn't started yet at UCSC, a fine time was had as Bob swapped useful hints and gleanings from past experience with the Kaypro enthusiasts. Thanks to Dave and the club for their hospitality, to say nothing of the GREAT Chinese dinner. And if you're a Kaypro user in the Santa Cruz area, Dave would like to hear from you at (408) 429-2324.

Also last month, the **FORTHians** were out in droves at their annual national convention in Palo Alto. **Charles Moore,** creator of FORTH, addressed the assembled throngs in his traditional "Fireside Chat," saying that, "If you look at the probabilities of alternate futures, this is not a probable future." Wearing an oversized cowboy hat which, he said, "is to keep you from taking me too seriously," Moore allowed as how the language's popularity has finally reached the stage of exponential growth its founders fondly hoped it would attain 12 years ago. Indeed, if the convention was any indication, the FORTHians are a force to be reckoned with: booths displayed various FORTH-based software and literature, while convention-goers heard presentations on FORTH-related topics ranging from space exploration to artificial intelligence to medicine.

Speaking of programming language enthusiasts, we encountered some other such groups in our wanderings through last month's **Personal Computer Faire** in San Francisco. **APL (A Programming Language)** users are invited to joing the **APL-BUG** group — memberships are $20 per year — by writing **Paul Jackson,** I.P. Sharp Associates, 220 California St., Suite 201, Palo Alto, CA 94306. Also, users of the **Lattice C** compiler are encouraged to join the **Lattice C Users' Group.** In return for $30 a year, members of this group receive six 16-page (no advertising) newsletters a year, which deal with new ways to use Lattice C and information on the C language in general. Contact the group at P.O. Box 271965, Concord, CA 94527 for more info.

Bond Shands of the **KAY*FOG BBS** wishes to inform callers that, contrary to previous reports, the board is not operating at 2400 baud. Bond says he *did* have a 2400 baud modem, but it proved so defective that he sent it back whence it came. Bond continues to welcome 300/1200 baud callers at (415) 285-2687, and suggests that you write him at P.O. Box 11135, San Francisco, CA 94101 for registration info. He also recommends that if the line is busy on the BBS callers should try to get through at the new additional number, (415) 826-2131.

Orphan computer tales abound this month. **Woody McPheeters** of Berkeley asks us, a bit plaintively, "to start a new section under User's Group entitled **Dynabyte**, and carry the listing for a few months, enough to see if there will be some response. At present, I feel a bit lonely. I have one friend who owns two of the machines, and another who used to own one, but I'd like to meet and know more." So if you're an owner of a Dynabyte machine (which, Woody explains, is an orphan Z80 S100 computer), please contact Woody at (415) 548-3126, or write him at 3128 King St., Berkeley, CA 94703.

Yet another tale of woe comes from **Calvin Demmon** of Monterey, who's involved with **PLUG** — the **Plus/4 User Group.** The Plus/4, for those of us who missed it, was a nice machine made by Commodore and abandoned after less than a year, says Calvin. It has lots of good built-in software; what it doesn't have is much additional software or much information about the machine itself. PLUG, says Calvin, "has one purpose: to help Plus/4 users get the most out of their computers, in spite of Commodore's apparent decision to ignore us. PLUG's chief activity is a newsletter published eight times a year. Each issue of the newsletter contains user-written reviews of programs that will actually work on the Plus/4 and lists the names and addresses of the manufacturers. The newsletter also contains feedback from Plus/4 users about what they are doing with this neglected but exceptional little computer." Plus/4 owners, especially those who are feeling a bit stranded, are invited to contact Calvin at Box 1001, Monterey, CA 93940. Membership is $20 per year, which includes a subscription to the newsletter and access to a growing public domain software library. (Calvin adds that PLUG doesn't have its own bank account yet, so please make checks payable to him.)

Last but not least among the orphan computer groups, **Robert Brown** of the **Gavilan Users Group** (a Special Interest Group of the **Silicon Valley Computer Society**) sends along the "Gavilan Autobiography" of this true phoenix among computers. Since Gavilan's demise some time back, vendors, ex-employees and other enthusiasts banded together for mutual support. As a result, there's a national network of local groups, repair facilities and bulletin boards that's kept the machine alive for seven years after its parent company's collapse. Best of all, after a constant process of information exchange, modification and development, there's now available what Robert calls the "NEW Gavilan Portable." This gem is modified to fit each user's needs, is expandable to 384K plus a 58K RAMdisk, has all Gavilan accessories, can accommodate a 20 meg hard disk, has 8-16 line LCD display with 25-line CRT capability, and uses over 70 major MS-DOS programs — all for $600. Gavilan users unaware of this available resource or desiring more information are requested to contact Robert at (408) 379-2774, or write him at 780 Manx Ave., Campbell, CA 94008.

Finally, **Dr. B. "Flash" Gordon** of the **Haight Ashbury Free Medical Clinic** came by our booth at the **Byte Show** and asked us to get the word out that the clinic is looking for a donation of a letter-quality printer (slow is ok). It seems that some kindly soul has already given the clinic a Columbia computer, but it would be a lot more useful if they had a printer to handle the reams of correspondence the clinic generates. So if you have an old lq printer you're not using, or if you'd like to repay those nice medics who helped you out at some Bay Area rock show over the last twenty years, contact B. "Flash" Gordon, M.D., Medical Director, Medical Section, Haight Ashbury Free Medical Clinic, 558 Clayton St., San Francisco, CA 94117. Or call him at (415) 431-1714.

Keep those cards and letters coming in to MicroTimes User Group Network, 5951 Canning St., Oakland, CA 94609. See you next month. ☐

Calendar Of Events

October 16	XT Compatible Club, San Francisco, demo on how to assemble an IBM-XT Compatible for under $950. (415) 668-0913 for info. Meeting 7 p.m., Lincoln University, Turk and Masonic, SF.
October 17 – 19	Conference, "Computer Technology And Persons With Disabilities," Cal State University, Northridge, 18111 Nordhoff St., Northridge, CA 91330. (818) 885-2578 for info.
October 18 – 20	Santa Rosa Computer Festival, "Technology For Business And Education," Luther Burbank Center, Santa Rosa. Free seminars. Contact Michael Judah, (707) 545-1414, or Ron Person, (707) 579-2603.
October 19	Computer Swap, San Mateo County Fairgrounds, Fiesta Exhibit Hall, 2495 S. Delaware, San Mateo, CA. (408) 266-978-SWAP for info.
October 19	"Project Management With Micros," conference, Sheraton Palace, San Francisco. Contact Aline A.C.E. Adalpe, (415) 567-8314, or write State of the Art Computer Conferences/Shows, 2841 Baker St., San Francisco, CA 94123.
October 19 – 20	Computer Sellathon and Expo, Shrine Exposition Hall, Downtown Los Angeles. Call Bernie Weiss at (818) 905-5476 for info.
October 20	"Current Issues In Information Systems Protection" conference, Holiday Inn, 750 Kearny St., San Francisco, CA. (415) 953-5586 for info. Sponsored by Bay Area Chapter of the Information Systems Security Association.

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Kay*Fog RBBS. A system designed for novice callers. No fees, but registration required. PO Box 11135, San Francisco, CA 94101. Sysop: Bond Shands. (415) 285-2687, (415) 826-2131. 300/1200 baud.

ROOTS—BBS. Available 24 hours, 7 days a week, supports 300/1200 baud at 8/N/1. Specializes in genealogical info with messages, upload and download of CP/M, DOS, Apple software. Sysop: Brian Mavrogeorge. (415) 584-0697.

Vortex BBS. (916) 481-0194. 24 hours, 300 baud. Pamela Lunsford, sysop.

Bulletin Board Hewlett-Packard BBS. Features HP-current events and user information. 24 hrs., 300-1200 baud, 7 bits, odd parity, 1 stop. NO FEE. (408) 747-1243.

Welch Net II. A public FIDO BBS. Message areas devoted to Turbo Pascal programming and Seequa Chameleon computers. Available 23 hours/day. (415) 391-9148.

The Man O'War, (408) 243-2370. 24 Hours, 300/1200 baud. Over 52 message bases, organized activities. A member of the Silicon Valley Sysop's Exchange.

The General Store Public Domain Programs. Computer industry and computer product information. Hundreds of diverse public domain programs including science, music, education, games, financial, and business programs for the Apple computer. Easy to use. 300 baud, 9 am - 12 pm, (415) 851-4497.

Fantasy Factory BBS. Fantasy Factory of Pacifica. IBM and compatibles oriented, but all welcome. 300/1200 baud, 8 bit, no parity, no fees. (415) 355-6047. Sysop Ev Cheney.

BULLETIN BOARDS

Pro Bono BBS (TM) is a public interest board with file areas devoted to legal self-help and education, landlord/tenant relations, financial and tax issues. Modem line is (408) 372-8737. Events and meeting information for several Monterey Bay user group events are posted on the message board.

Software First BBS 24 hrs., 300 baud. (415) 459-1544 Marin, (707) 579-1478 Sonoma. 5 boards - restaurant, sales, Amiga, ST, general E-Mail, monthly specials on hardware, software, peripherals.

Bay Connextion BBS (415) 621-7561, 9pm - 9am. 300/1200 baud at 8/W/I. Macintosh Software, Classifieds, Personals, Sexual Freedom, and Star Trek. Claude Wynne, sysop.

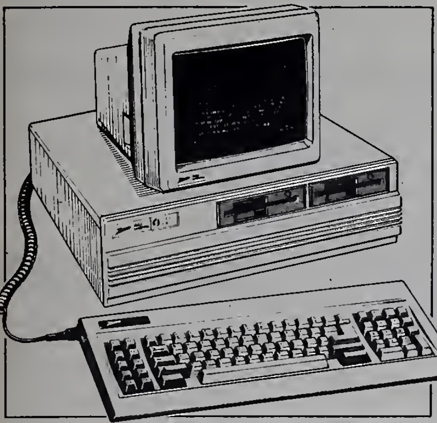
Silicon Valley Sysop's Exchange. Merlin's Castle BBS (300 baud only), (408) 578-1563. Sharks Head BBS (300/1200 baud), (408) 247-4810. The Man O'War (300/1200 baud), (408) 243-2370.

Northern California L5 BBS Morgan Hill, CA, (408) 778-3531, 300/1200 baud, 24 hours. Supports the L5 Society in promoting the development of space.

Napa Valley RBBS/RCP/M (707) 257-6502. Interests in Atari, Apple, Osborne, dBase II.

Bay Area Atari Users Group 24 hour BBS (408) 578-2390.

The Bay PBBS 300/1200 Baud full duplex. 24 hrs., 20 megs online. Apple super-32 computer section, excellent Macintosh/Apple II downloads. (415) 775-2384. Easiest to get through in the mornings.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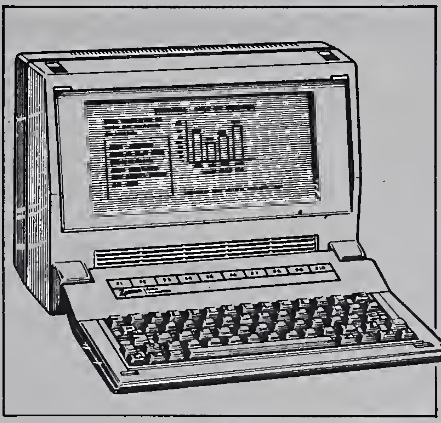
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NCR BBS of Northern California (408) 744-0556. Bulletin board for all users of NCR microcomputers (PC-4 and Decision Mate V). Learn more about NCR's microcomputers. Contact Lee Sherman or Jim Chandler, 756 San Aleso Ave., Sunnyvale, CA. (408) 743-4933.

SIMMS (Silicon Valley Interchange) 4000 files on line. New releases, communications, and utilities for CP/M based computers are available on a nonprofit public-domain, 24 hour remote CP/M system. The SiMMS (Silicon Multiple Message System) Network Headquarters runs on a CompuPro 816 with 40 megabyte hard-disk drive. The Modem number is (408) 732-9190. To register, send a six-digit password and $25 to SiMMS Headquarters, Silicon Valley Interchange RCP/M Registration, Box 532, Cupertino, CA 95015. Sysop: Ed Svoboda Jr.

MBL Referral System BBS A board dedicated to personal messages and advertising listings. Modem: (415) 444-6362; 6 pm - 6 am weekdays, 24 hours weekends. MBLRS BBS users meeting Saturdays, 5:30 pm, 1555 Lakeside Drive, Suite 23, Oakland. Call (415) 444-3033 for info, ask for Mel.

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The Consultant's Exchange BBS Serving professional computer consultants and students since 1983 with the finest public domain software for the IBM-PC. Featuring consultants list and job list. (714) 842-6348 24 hours.

Thousand Oaks Technical (805) 493-1495. This massive 64 megabyte board has a mind-boggling number of downloadable programs. The board has no bulletin board feature and allows unlimited upload time. Download time is limited depending on upload exchange.

Granada Engineering Group RCP/M (818) 360-5053. Technical information, BBS lists, and help on CP/M assembly language program writing.

Aware II (213) 851-0780. Sports BBS with different discussion boards centered around USFL, baseball, etc.

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FOCUS-MED (Federation of Computer Users in Medicine). Open to all physicians and health professionals. Practice management consultant registry. (415) 626-4600.

FOCUS-DDS (Federation of Computer Users in Dentistry). Open to all dentists and dental professionals. Practice management consultant registry. (415) 626-4600.

ITRA Independent Technical Representative Association is an organization dedicated to helping people better understand the Personal Computer (IBM). Contact Tim Jones, 870 Market St. #609, San Francisco, CA 94102, (415) 421-4872 for meeting time and date.

MCTUG (formerly Marin County TRS-80 Users' Group). MS-DOS, CP/M and Tandy users group. Meets 7:30 pm on the first Monday of the month at the Larkspur Masonic Lodge, 1122 Magnolia Ave., Larkspur. Contact Dr. Frank Hovell, 907 Sprucewood Court, Petaluma, CA 94952, (707) 762-5740.

PRACSA (Public Remote Access Computer Standards Association) offers to clubs, schools, and user groups a Speakers Bureau. The purpose of the bureau is to act as a resource to these groups in obtaining speakers of high quality for their meetings. The volunteer speaker is provided free to the group. Contact (408) 262-5150. Meetings 4th Wednesday, 7 pm, Vadic Cafeteria, 222 Caspian Dr., Sunnyvale.

San Bruno Computer Club. Meetings Wednesday 7:30 pm. Call Pete Testart, (415) 952-9309 for information.

San Francisco Computer Society (Formerly the San Francisco First Osborne Group). A society for users of portable computers and/or the CP/M operating system. P.O. Box 783, San Francisco, CA 94101-0783. Meetings on fourth Thursday of the month, St. Aidan's Church, Diamond Heights and Goldmine Dr. in SF. All are invited. Dues $10/yr.

FUN (Friendly Users' Network). A new social and business network for computer people. For information call (415) 567-4448.

Software Entrepreneurs' Forum, PO Box 61031, Palo Alto, CA 94306. (415) 854-7219.

PATCA (Professional & Technical Consultants Association). 1330 S. Bascom Ave., Suite D, San Jose, CA 95128. (408) 287-8703.

BAYMUG. Bay Area MicroProcessor User Group. General computer group, mostly CP/M and S100. All types of interests welcome. Celebrating our 10th year of meetings! Meetings 1441 Rolins Rd., Burlingame, CA, 1st Thursday, 7:30 p.m. Contact Victor K. Bailey, P.O. Box 248, Pleasanton, CA. 94566. (415) 462-4442.

NATIONAL/ INTERNATIONAL

Network Users Association. 2111 Eisenhower Ave., Suite 400, Alexandria, VA 22314. (800) 638-8510 or (703) 683-8500.

TPUG World's largest Commodore Users Group. $25 annual membership entitles you to access to library of public domain software for C-64, VIC 20, PET, CBM, SuperPET, B-128. Coming soon — Plus 4, C-16, C-128. New disks added each month. Also TPUG Magazine (10 per year), free access to TPUG's Bulletin Board Modem System, 24 hours, 7 days. TPUG Inc., 1912A Avenue Rd., Suite 1, Toronto, Canada M5M4A1.

NATIONAL/ INTERNATIONAL

Apple Co-op 290 SW 43rd, Renton, WA 98055. (201) 251-5222.

JUG (Jefferson State Computer Users Group). Many SIGs, newsletter. Dues $5.00 year, some SIGs additional. Contact JUG, P.O. Box 457, Gold Hill, OR 97525-0457.

Golden Apple Club, Apple II and Macintosh. Contact Stefano Minotto, Golden Apple Club, Riviera Tiso da Camposanpiero, 26, — 35100 Padua, Italy.

USER GROUPS

ACTRIX

ACTRIX Computer Enthusiast Society. Membership ($20/yr) provides public domain software, group rates, discounts for owners of Actrix/Access Matrix microcomputers. Meetings at Sunnyvale Community Center, last Wednesday of the month, 7 pm. Contact K. Edward Lynch, 1405 Phelps Ave. #29, San Jose 95117, (408) 756-5104, for more information.

ADAM

California's Adam Users' Group. For a sample issue of the newsletter and a hardware-software catalog free, send your address to CAUG, 1643 Beach St., San Francisco, CA 94123.

APPLE

San Francisco Apple Core Meets every third Saturday of the month at Fort Mason, Bldg. C, Room 100 at 10 am. New products and innovations are featured for Apple II, Apple III, Macintosh and Lisa. Public domain library, SIGs, tech help, newsletter. $20 per year membership. Info: SF Apple Core, 1515 Sloat Blvd., Suite 2, San Francisco, CA 94132. (415) 566-2342 (voice), (415) 474-8608 (BBS/modem).

SPCA (Society For The Prevention of Cruelty To Apples) The Society for the Prevention of Cruelty to Apples is a club for owners of Apple, Apple-compatible (Franklin, etc.) and Macintosh personal computers. It meets at 7:30 pm on the last Wednesday of the month at Thornton Jr. High School, on Thornton Ave. at Dusterberry, in Fremont. Contact SPCA Publicity Chairman Milton Buck, 5246 Channel Drive, Newark, or call (415) 794-2822 for more info.

Association of Apple 32 Users Macintosh, Lisa. An association of "knowledge workers" who wish to share information on products, applications, and events. User-developed, non-copyrighted software, SIGS, newsletter. P.O. Box 634, Santa Clara, CA 95052.

Apple Eaters Users Group. Apple II users group meets monthly (first Thursday) at Hayward Softwaire Centre. Operates, with San Leandro H.S., a 24 hr. free BBS at (415) 577-3409. Meetings 22406 Foothill Blvd., Hayward. Contact Bob Shayler, 2200 Bancroft Ave., San Leandro, CA 94577, for more information.

Pen Apple. Pen Apple Users Group meets 2nd Thursday of each month at AMPEX cafeteria, 7:30 pm, Redwood City. Draco Bulletin Board. Contact Karl Shores (415) 366-0339.

Diablo Valley Apple Users. Meets 3rd Friday of each month at EMS, 2371 Stanwell Dr., Concord, at 7 pm. Contact Lynn Hart, P.O. Box 5031, Concord, CA 94524, (415) 798-9281.

APPLE

South Peninsula Apple Computer Enthusiasts (c/o David Harris, P.O. Box 1257, Palo Alto, CA 94302) meets near the Varian Credit Union, Bldg. 4C, 611 Hansen Way, Palo Alto, at 7:30 pm on the first Tuesday of every month to exchange information about available hardware, software, events, publications, and methods on Apples, and to encourage collaboration on projects. Call (415) 856-9126 — answering machine takes 30-second messages.

Roseville Apple Core. Meets 1st and 3rd Tuesday each month at Roseville Public Library. Contact Dave Smart, P.O. Box 1377, Roseville. (916) 961-2249.

ASHTON-TATE

Framework/Editor Bay Area Users Group (FREDBUG) Purpose of the group is to share programming and applications techniques under FRAMEWORK for the business and technical professional. Call for info: Rudi Wiedemann, (408) 730-4159.

San Francisco dBase User Group For advanced users and programmers. Meets once per month. Membership required for attendance. Contact Frank A. De Coster, 1100 Gough St., San Francisco, CA 94109, (415) 474-6693.

dBase Users Group. Meets 2nd Thursday each month at Softwaire Center, 1975 Diamond Blvd. #C220, Concord (Willows Shopping Center), 7:30-9 pm. Contact Cyndy Kolnick (415) 235-7317 for information.

ATARI

C.O.A.S.T. (California Oakland Atari S.T.) Bay Area's first ST only user group. Fun, information, and more. Call for more info: Axel Olmos, P.O. Box 20481, Piedmont Station, Oakland, 94620, (415) 658-3159.

ABACUS (Atari Bay Area Computer Users Society) All ATARI users or prospective users are welcome. Membership ($15/year) provides public domain software, low cost blank disks, monthly newsletter, group prices on hardware and software, help from experts, low cost classes for beginners. Meetings first Saturday of the month, Fort Mason, SF, Room 300, Bldg. C, 10 am-2 pm. Contact Bill Zinn, P.O. Box 1823, Mill Valley, CA 94941. (415) 753-8483.

A.C.M.E. (Atari Computer — Marin Enthusiasts) Meets monthly in Marin, third Thursday evening monthly from 7 pm on. Gallinas School, 177 N. San Pedro Rd., San Rafael. Contact Bruce Frank, (415) 435-6020, P.O. Box 222, Tiburon, CA 94920.

Diablo Valley Atari Computer Enthusiasts (D.A.C.E.) Contact Richard C. Foster, Secretary, 3760 Lindero Drive, Concord, CA 94519.

Bay Area Atari Users Group We have a 24-hour BBS at (408) 578-2390. Meetings at Dysan Auditorium, 4201 Patrick Henry Drive, Santa Clara, CA 95050, first Monday of the month. Contact Frank Nagle, P.O. Box 50459, Palo Alto, CA 94303, (415) 940-1323 for more info.

San Leandro Computer Club Although open to all computer users, this group is primarily oriented to Atari computer owners. Our club is considered one of the best in the country, worthy of consideration by both novices and experts. Meetings 1st Tuesday of the month at San Leandro Community Library, 300 Estudillo Ave., San Leandro, CA. Contact Phil Mitchell, P.O. Box 1525, San Leandro, CA 94577-0152 for more info, or call (415) 351-2208.

ATTACHE

Attache UNL Otrona may be dead, but the Attache Users News Letter Lives ON!! Contact Jim Ayers, 301 Poplar St., Mill Valley, CA 94941. (415) 388-4805. Meetings 7:30 pm, 2nd Wednesday.

BASIS

Bay BUG Basis 108 Users meet every first Friday of the month at College of Alameda Computer Room, 7:30 pm. Contact Roger Bernhardt, 536 Mission, San Francisco or call (415) 221-0262 for more information.

CASIO

Casio Research Project. Discussion and collaboration; creation of plug-in expansion board using VLSI chip. Share programs. Meetings TBA. Contact Julius M. Zebrowski, (415) 969-9458.

COMMODORE

San Francisco Commodore Users Group Public domain library, classes, tech help, in depth demonstrations, monthly newsletters, Epromer, savings on purchases, all this and more. BBS # (415) 626-6330, (415) 268-3769 300 baud. Meeting address 256 Laguna Honda Blvd., San Francisco, 3rd Tuesday of the month, 7:30 pm. Contact Roger Tierce, 278 27th Ave. # 103, SF, CA 94121, (415) 387-0225.

20/64 Computer Users Group — San Jose Meets first Sunday of the month at the Theatre Building, San Jose City College, from 6 to 9 pm. (Donations requested to help defray cost of renting meeting space.) Call Herb Miller, (408) 253-2064 for more info, or write P.O. Box 18473, San Jose 95158.

20/64 Computer Users Group — San Jose North Valley Meets second Saturday of the month at the second floor Community Room of Montgomery Ward's, Capitol and McKee Roads, San Jose, from 10 am to noon. (408) 253-2064.

20/64 Club The Cupertino chapter of the 20/64 club for Commodore users meets the second Sunday of each month, Cupertino Public Library, 6 pm. Contact Rex Ackerman, P.O. Box 61063, Sunnyvale, CA 94086. Phone (408) 245-7270.

20/64 Computer Users Group — Campbell Meets the fourth Tuesday of the month at the Campbell Public Library, 70 North Central Avenue, Campbell, from 6:30 to 9:30 pm. (408) 253-2064.

20/64 Computer Users Group — Gilroy Meets the second Wednesday of the month at the Gilroy Public Library, 7397 Rosana Street, Gilroy, from 7 to 9 pm. (408) 253-2064.

Diablo Valley Commodore Users Group Meetings Contra Costa Water District Auditorium, 1331 Concord Ave., Concord, CA, second Thursday of month at 7:30 pm. Write DVCUG, P.O. Box 27155, Concord, CA 94527, or call (415) 838-2838 for more info.

Napa Valley Commodore Computer Club Meets first and third Mondays, 7:30 pm, at Northwood Elementary School, 2214 Berk St., Napa. Take Redwood Road to Dover St. to Berk St. Contact President Dick Bull (707) 257-3773 or vice-president Roger Pruym (707) 253-1690 for more info.

Lake County Commodore Users Group Contact Al Reuss, P.O. Box 388, Clearlake, CA 95422.

Marin Commodore Club Meets at Redwood High School, Corte Madera. Visitors welcome. Contact Elmer Johnson for information: 665 Las Colindas, San Rafael, (415) 479-0426.

PUG of the Silicon Valley Commodore 64 (PETs, 8032s, 2001s also). Friendly computer group established back in 1977

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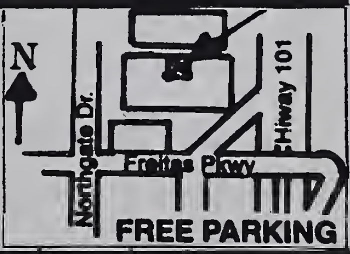

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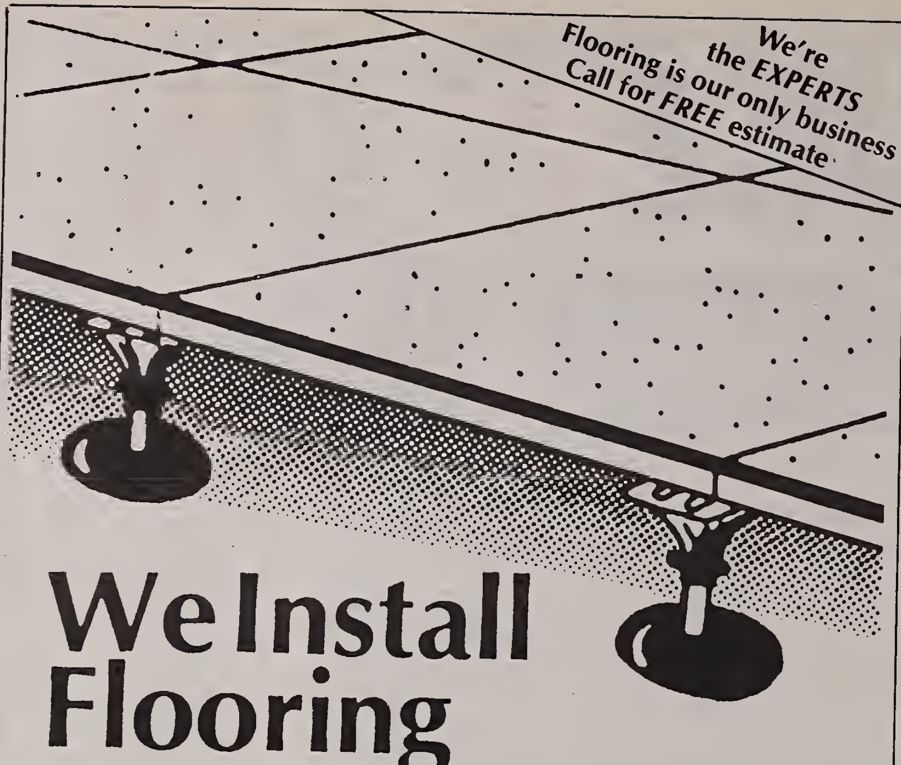

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Contact name ____________________
Address ____________________
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Text of ad ____________________

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5951 Canning Street
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USER GROUP NETWORK

COMMODORE

with a very extensive disk library. No dues, donations only. Bring your machines to the meeting or use club dual disk drive to copy programs. Meets at cafeteria, Ford Aerospace Bldg. #3, 3939 Fabian Way, Palo Alto, CA 94303, 1st Wednesdays of the month, 7-10 pm. Contact Marvin Vander Kooi, (408) 446-1936.

Peninsula Commodore User Group Public domain library, demonstrations, user help, newsletter. Membership is $25 per year. Non-members pay $2 at door. Meetings are 3rd Tuesday of each month. Meeting place is the Church of the Good Shepherd Hall, 1300 5th Ave., Belmont (across from city hall). For more info call (415) 595-5452 between 9 am and 6 pm, or call our BBS at the same number after 6 pm.

The Commodore Connection. Newsletter, BBS, public domain disks, dealer support and more. Approved member of Commodore World. Call (415) 458-3318 8 am - 8 pm or 8 pm - 8 am for the BBS. Meetings 1st and 3rd Mondays, Neighborhood Center, Civic Ave., Pittsburg, CA, 7:30 pm.

Commodore User's Group of Hayward. The CUG of Hayward meets the first Saturday of each month from 3 to 5 pm at the Commodore Computer Center located at 22521 2nd St., Hayward. Call (415) 886-1916 evenings between 5 - 8 pm or (415) 537-1323 days bvetween 10 am and 5 pm.

NBUG (North Bay Users Group). Contact Jim Stephens, president, 124 Delgado St., Vallejo, CA 94591, or write P.O. Box 7116, Vallejo, CA 94590.

COMPAQ

SF Compaq. A Compaq user's group is being forming in the SF Bay Area. Contact David J. Blow, 439 Hoffman Ave., SF, CA 94114, (415) 221-2764.

CROMEMCO

Silicon Valley Cromemco Users Meets 4th Tuesday of the month at MCM Enterprises. 215 Hamilton Avenue, Palo Alto, CA. Call Ken Brown at (415) 327-8080 for details.

EAGLE

Eagle Computer Users Group (ECUG) Forum for exchange of info and ideas relating to Eagle Computers. Meetings and classes in WP, Data Base, Modems, CP/M, MS/DOS, etc. Meetings at Mercury Savings and Loan, 859 Blossom Hill Road, San Jose, fourth Monday of the month, 7 - 9 pm. Contact David Meisman, P.O. Box 3381, Saratoga, CA 95070, (408) 973-1254/973-1460.

Screaming Eagles User Group for 8 bit CP/M machines. Quarterly newsletter, public domain disk. Meet on CompuServe (PCS 54). $10/year individual, $20/year business. 101 Parnassus #1, San Francisco, CA 94117. (Voice) (415) 661-4362.

ENABLE

ENABLE Users' Group. Supporting users of Enable, the integrated software system. Monthly meetings and newsletters. Registration and year's dues: $25.00. Loaner copy available for trial. Meetings at Fort Mason Center, SF. Time and date vary—write for sample newsletter, or call: Lion Goodman, 38 Glen Dr., Mill Valley, CA 94941, (415) 381-3300.

EPSON

Bay Area Epson Salts — Epson 125 Del Centro, Millbrae, CA 94030, (415) 697-0567.

Epson Users of San Francisco Bay Area Epson group has nationally circulated newsletter *Valnews*: 400 members — mostly QX-10 owners, growing software library. Meetings focus on mutual support. Mainly Valdocs and other applications. Meetings first Thursdays. 7 p.m. Fort Mason Center, Bldg. C, Room 205, San Francisco. Contact Alan Magary, 904 Irving St., Suite 271, San Francisco CA 94122, (415) 661-9270.

Napa Valley Epson Users Group 1307 Hestia Way, Napa, CA 94558, (707) 253-8727.

FORTH

FORTH Interest Group, Berkeley Chapter. Meets 2nd Saturday of the month at 1 pm, 10 Evans Hall, UC Berkeley. Contact Mike Perry, (415) 644-3421.

FORTH Interest Group, Monterey/Salinas Chapter. Contact Bud Devins, (408) 633-3253.

FORTH Interest Group, Sacramento Chapter. Meets 2nd Tuesday of the month, 7 pm, 170B 59th St., Room C. Contact Tom Ghormley (916) 444-7775.

FORTH Interest Group, Bay Area Chapter. Meets 4th Saturday of the month, 10 am advanced, 1 pm beginning, at ABC Christian School Auditorium, Dartmouth and San Carlos Ave., San Carlos (408) 277-0668.

FORTH Interest Group, Stockton chapter. Contact Doug Dillon (209) 931-2448.

GAVILAN

Gavilan Users Group. BBS (408) 978-DATA 300/1200. Meeting 2nd Thursday 7:30 pm, 10250 De Anza Blvd., Cupertino. Info call Bob Brown (408) 379-2774.

HEATHKIT

San Jose Heathkit Users Group. Meets first Wednesday at 7 pm at the Heathkit store on South Bascom Ave. in Campbell.

B.A.H.U.G. Heath/Zenith computers, CP/M and MS-DOS. Meetings at 2001 Middlefield Rd., Redwood City, CA, 7 pm, 4th Tuesday. Contact John Lindquist, 642 Hollenbeck Ave. #1, Sunnyvale, CA 94087.

IBM

San Francisco PC Users Group Largest SF group focusing on IBM and compatibles. Over 150 disks of public domain software, excellent monthly newsletter. 800 + members, $25/year. Write 4444 Geary Blvd., Suite 33, San Francisco, CA 94118.

South County PC Users Group Meetings held second Thursday of each month, at Software Center, 22406 Foothill Blvd., Hayward, CA. Public Domain club disks, newsletter and help on MS-DOS problems. Contact Debra Taylor, P.O. Box 7656, Fremont CA 94537-7656 for more info, or call (415) 276-5111.

Sacramento IBM-PC Users Group. P.O. Box 685, Citrus Heights, CA 95610. Contact George W. Lefler (916) 988-2274.

SVCS (Silicon Valley Computer Society). IBM users group. Meets second Wednesday at 7 pm at the Westinghouse auditorium located on the corner of Duane and Britton Aves., in Sunnyvale.

California PC LAN Users Group, 1625 The Alameda, Suite 511, San Jose, CA 95126. (408) 289-1711.

Diablo Valley PC. An IBM PC User Group, monthly meetings, newsletter and public domain software library. Contact Al Hunt, president, 2250 Morello Ave., Pleasant Hill, CA, (415) 671-0439. Meetings at 1331 Concord Ave., Concord, second Monday of the month.

KAYPRO

Santa Rosa KUG Owners of Kaypro computers or CP/M systems are invited to join the SRKUG. We conduct seminars and software instruction/training. Come join the fun. Meetings 3rd Thursdays of the month at 7 pm. Call for meeting address: James Daniels, 1029 Damon Court, Santa Rosa, CA 95401. (707) 575-8149.

BAKUP (Bay Area Kaypro Users and Programmers). One of largest Kaypro user groups in country. Meets 3rd Tuesday of month, 7:30 pm. We support our RBBS/RCPM for members, publish a monthly newsletter, have a 40 volume software library, and a lot of fellow KP'ers! Write for info, $10 per year to join: Membership Coordinator, P.O. Box 20181, Oakland, CA 94620.

KAYFUN Peninsula Kaypro Users Group meets second Thursday of every month at 7:30 pm in the ground floor social room, 222 Laurel St., San Carlos. Bimonthly newsletter, public domain software library, and publication library. Membership $12 per year. Every third meeting a Free Forum night dedicated to individual help. Contact Larry Welling, 222 Laurel St. #310, San Carlos, CA 94070, (415) 593-9981.

South Bay Kaypro Users Group (SBKUG). Meetings at 10400 Torre Ave., Cupertino. We have an extensive library of public domain software, including over 200 diskettes of the SIG/M library. The floor is open for questions at each meeting, and we welcome new members at all levels of ability. Bring your machine, or at least your diskettes. For meeting night call Chuck Hansen at (408) 257-5244, or write P.O. Box 390088, Mountain View, CA 94039-0088.

HAYPROS. Kaypro User's Group - informal format, dealer supported. Meets at Computer Insights, 40957 Grimmer Blvd., Fremont, CA 94538, 1st Tuesday each month. Contact Ted de Castro, 18841 Vineyard Rd., Castro Valley, CA, (415) 581-8882.

MACINTOSH

EBMUG (East Bay Macintosh User's Group) Friendly, informal. Public domain software and computer book library. Information exchange. Speakers. Product discounts. Free admission. Meets at West Berkeley Public Library, 1125 University Ave., Berkeley, CA, third Tuesday of each month at 7:30 pm. Contact Shep Tamler, 5901 Broadway #7, Oakland, CA 94618. (415) 653-5849.

Bay Area MacForum New and experienced Macintosh users. 2 monthly meetings: one immediately following San Francisco Apple Core meeting at Fort Mason, Building C, Room 300, San Francisco, 3rd Saturday of the month; one at Software Center, The Willows Shopping Center in Concord, second Monday of the month, 7 pm - 9 pm. For info: 1515 Sloat Blvd. # 2, San Francisco, CA 94132, (415) 566-2342

Berkeley Macintosh Users Group meets every Thursday evening at 5:30 pm on the UC Berkeley campus, in Physical Sciences Lecture Hall (near East Gate). Speakers, discussions, questions and answers. Developer SIG meets every other Wednesday at 5:30 pm on UCB campus in Dwinelle Hall lobby. For more info contact Reese Jones, Director, 1442A Walnut St., Suite #153, Berkeley, CA 94709 or call (415) 849-9114.

MacNexus. Sacramento's Macintosh User Group. 150 members, but still informal. Extensive public domain collec-

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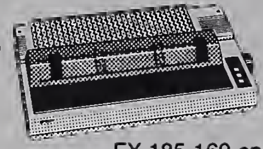

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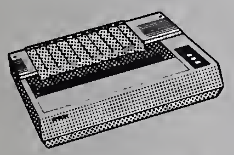

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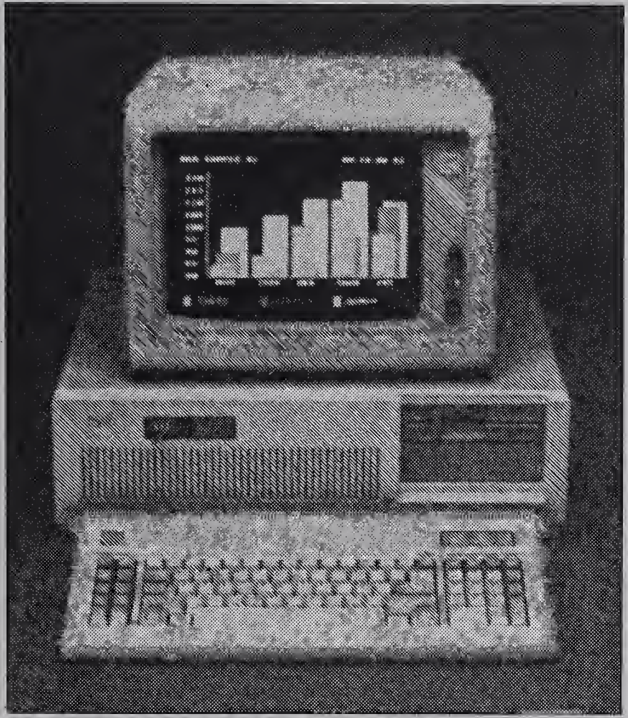

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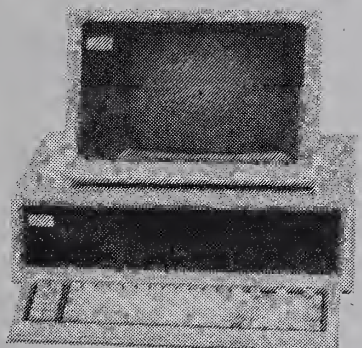

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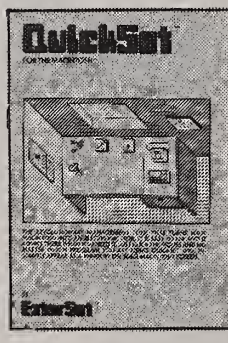

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tion. Contact Gail McGovern, P.O. Box 60908, Sacramento, CA 95860, (916) 446-2411. Meetings 3rd Thursdays, 6:30 pm, Almond Plaza, 17th & C, Sacramento.

MacProgram Unlimited. Meets monthly. Informal with hands-on testing of different programs. Public domain and standard programs in rental library. Meets Albany YWCA, Kains and Solano, Saturday 9:30 am. Contact William Gong, P.O. Box 7704, Berkeley, CA 94707. (415) 527-1756.

Stanford Macintosh User Group. P.O. Box 6508, Stanford, CA 94305. (415) 854-2118.

MicroMate. East Bay MicroMate Users' Group. CP/MT (3.0) public domain software available. Meetings at 757 Longridge Rd., Oakland, 1st Thursday of each month. Contact Ed Miler, P.O.B. 402, Moraga, CA, 94556, or call (415) 376-1611 for info.

MINDSET

First Mindset Users Group Monthly meetings and newsletters cover advanced topics in computer graphics, animation, and video production using the Mindset Personal Computer and accessories. Meetings at various Bay Area locations, 3rd Monday of the month, 7 p.m. Contact Tim Negris, 138 Village Ct. #6, Walnut Creek, CA 94596, or call (415) 934-1448.

MORROW

BAMDUA (Bay Area Micro Decision Users Association). Meets on last Tuesday of the month, 7:30 pm. Call (415) 644-2805 for location. Monthly newsletter.

NORTHSTAR

INSUA Largest North Star users group in the world. Members' newsletter and software library. Membership dues $20. Contact George Riddle, P.O. Box 2910, Fairfield, CA 94533.

OSBORNE

East Bay FOG (First Osborne Group) Osborne, Kaypro and Morrow. Meets second Wednesday of the month at B&B Electric, 2832 Ford Street, Oakland. 6 pm workshops, 7:30 pm program. For info contact 5497 Taft Ave., Oakland, CA 94518; phone (415) 272-9099.

SMOG3 Osborne User Group (Peninsula) Meets first and second Monday of every month at Crane Place, 1331 Crane, Menlo Park. Call Phil Moore at (415) 325-2442.

MTDOG (Mt. Diablo Chapter—First Osborne Group) Meetings 7 pm, 3rd Wednesday each month in Diablo Room (top floor), SF Federal Savings and Loan, 1660 Olympic Blvd. (cross-street: California), Walnut Creek. Software library, software/hardware/service demonstrations, sharing problems and solutions. For meeting info contact Sylvia Tobias, (415) 376-4720.

PICONET

Piconet CP/M Users Group. Meets second Thursday at 7 pm at the Stanford Linear Accelerator Auditorium, Palo Alto. The password at the gate is "Piconet Meeting."

PIED PIPER

Pied Piper Users Group Owners of Pied Piper CP/M based computer are invited to call or attend the PPUG. Meets last Tuesday of the month at 7:30 pm. Please call (415) 638-1146. Meeting address: 10950 Elvessa St., Oakland 94605.

R2E

North Bay R2E Forming user group for R2E System microcomputer users. Please call (415) 235-1598 for information.

RADIO SHACK/TRS

Byte Bandits of America TRS-80's workshop computers club — bimonthly meetings — 2nd Saturday and 4th Wednesday of the month. Bring your computers. Free membership. Modem (408) 374-3974. Meetings at 780 Many Ave., Campbell, CA. For info contact R.W. Brown, (408) 379-2774.

TRS-80 Computer Society of Diablo Valley The purpose of this group is the sharing of information, problem solving, support group, purchasing discounts, support for professional, business and educational users of Radio Shack computers. Out-of-area members welcome. Meetings second Tuesdays of the month, Willow Creek Center, 1026 Mohr Lane, Concord, 7:30-9:30 pm. Doors open at 7. Contact Roy or Sue Copeland, P.O. Box 23438, Pleasant Hill, CA 94523, (415) 372-7003.

MCTUG (Marin County TRS-80 Users Group). Meets once a month on the second Monday. Meetings start promptly at 7:30 pm in the Larkspur Masonic Lodge, 1122 Magnolia Avenue, Larkspur. For information contact Frank Hovell (707) 762-5740 or Lois Johnstad (415) 453-5412.

TRS Nybblers. Since 1979. New MS-DOS SIG, 3rd Fri. ea. mo., Room 1500; CP/M SIG 1st Fri. ea. mo. BBS (415) 582-8442—24 hrs. DSDD disks, boxed, $14.00. Meetings at Chabot College, Hayward, 2nd Friday, 8 pm. Contact B.B. Jarvis, 1975 Paseo Del Cajon, Pleasanton, CA 94566. (415) 582-8442.

SAMNA WORD

SAMNA Word III San Francisco or East Bay telephone network forming to discuss glitches, ideas, and interface hassles. Contact Shanti Pederson, (415) 982-8898.

SANYO

Sanyo 1100/1200 User Group of the San Francisco Bay Area. P.O. Box 297, San Mateo, 8-10 pm, every 2nd Friday of month. Send large self-addressed stamped envelope for copy of newsletter.

Sanyo MBC 1100-1150 user group now forming in Oakland. Call or write (415) 534-1981, 5885 Bancroft Ave., Oakland 94605 for meeting time and location.

Sanyo User Group of the San Francisco Bay Area meets 2nd Friday of the month at Sears Savings Bank, 1820 S. Grant, San Mateo, 8 - 10 pm. Devoted to Sanyo 8-bit CP/M machines: MBC 1000, 1100, 1200 series. For info write 1260 Westwood St., Redwood City, CA 94061.

Sanyo National Users Group. SNUG is a central resource for Sanyo information and public domain. Inquiries welcome! Contact Ken Taylor, 4008 Pasadena Dr., San Mateo, CA 94403. (415) 345-7781.

Santa Clara Sanyo Users Group. SCSUG's 24 hour BBS (415) 659-9169. Support for MBC-55X Systems. Meetings at 1 West Campbell Ave. #80, Campbell, 7-10 pm every 3rd Wednesday of the month. Contact Jim Thomas, (415) 651-0201 for info.

Sanyo PC Compatible Club. SPCCC supports Sanyo 16 bit machines and similar PC clones. We publish the Sanyo PC Hackers Newsletter (International), subscription rate $20/yr., and maintain a public domain software library. Meeting at the Mercury Room of Mercury Savings & Loan, 99 El Camino Real, Menlo Park, CA, 7-9 pm the first Wednesday of the month. Contact Victor R. Frank, 12450 Skyline Blvd., Woodside, CA 94602, (415) 851-7031.

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South Bay T.I. User Group. One general meeting per month. We have training session, library and own bulletin board (408) 578-6264. Meets first Thursday of each month at 7:00 pm, 1368 N. 4th St., San Jose. Contact Fred Roettger, v.p., for info: (408) 253-3510.

Nor-Cal TI 99/4A Users Group. Learn more about your Texas Instruments 99/4A computer. Free software, sources ofr hardware and software. Contact Dave Steady, 324 Howard St., Petaluma 94952, (707) 762-6561. Meetings at Retail Clerks' Union Hall, 382 Tesconi Ct., Santa Rosa, CA, first Wednesday of the month at 7 pm.

TIMEX/SINCLAIR

East Bay Timex/Sinclair User Group (EBZUG) Timex/Sinclair user group. S/W library and newsletter. Meets at West Branch of Berkeley Public Library at corner of University and San Pablo. Meets 3rd Tuesday of the month at 7:30 pm. Contact Rick Link. 654 40th St., Richmond, CA 94805. (415) 234-3310.

Peninsula Timex/Sinclair User Group (PUG) Timex/Sinclair user group. S/W library and newsletter. Meets at Peninsula Hospital, 1783 El Camino, Burlingame. Meets 3rd Sunday of the month at 1 pm. Contact George Mockridge, 263 Gateway #107, Pacifica, CA 94044. (415) 359-3198.

Silicon Valley Timex/Sinclair User Group (SVTSUG) Timex/Sinclair user group. S/W library and newsletter. Meets at Dysan Corp., 5201 Patrick Henry Drive, Santa Clara. Meets last Tuesday of the month at 7 pm. Contact Rita Carr, P.O. Box 4133, Santa Clara, CA 94044-0133. (408) 738-2888 ext. 45.

UNIX

The Unix C-Club Seminars, public domain softwares, information exchange, Unix hardwares and softwares. Discount on purchases. Meets 2nd Saturday of each month at 10 am. Call Gilbert B. Dalit at (415) 348-6723 or (408) 238-5587 for more information, or write: 122 2nd Ave., Suite 214, San Mateo, CA 94401.

VECTOR

Bay Area Vector Group Meeting held regularly. Please call to be put on mailing list. You will be informed of next meeting! Contact Peter Tjeerdsma, 764 Cole St. #4, San Francisco, CA 94117. Phone (415) 681-0308.

VICTOR

Victor* Group is the San Francisco Bay Area Victor User's Group. We have three chapters — East Bay, South Bay, and San Francisco. Members can attend meetings at any of the chapters or all of them. The more the merrier. Dues are $30 a year, which includes a subscription to VictorTalk, membership in a Victor-exclusive discount buying cooperative, and the right to buy from our public domain library at a discount. South Bay meetings are held the first Thursday of each month at Computer Insights, 40957 Grimmer Blvd., Fremont at 7:30 pm. Contact John Kimber (415) 797-6423. East Bay meetings are held the second Wednesday of the month at 7:30 pm; contact Boardman Moore (415) 283-3285 for location and further info. San Francisco meetings are held the third Sunday of the month at 5 pm at Homestead Savings, 130 West Portal, San Francisco. Contact Joe Zmuda, (415) 584-4048.

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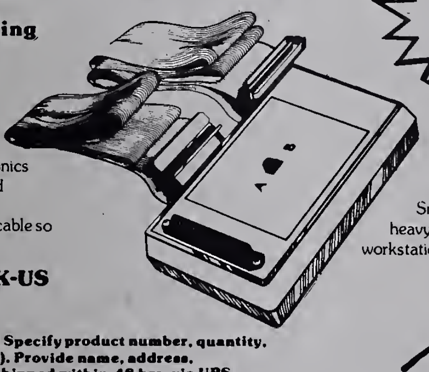

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Little Computer People Research Project

By David Crane, Sam Nelson, and The Little Computer People Research Team

You may think of Activision primarily as a purveyor of video games. In so thinking, you would be doing the company a grave injustice, since its personnel have long been engaged in anthropological research. The following is an internally circulated memo on the research group's findings, and is reprinted by permission in order to better disseminate the results of Activision's extensive studies.

HISTORICAL PERSPECTIVE

Many people have suspected that there was something more than just electronic components inside of computers since the early days of the computer revolution. How else could designers and programmers entering perfect instructions explain system failures and syntax errors when executing commands? The failures were frustrating and counter-productive, yet their consistency suggested intelligence. We were intrigued enough to begin an investigation of the phenomenon.

In the Fall of 1984, Richard Gold, a Southern California artist/composer with a computer background, adopted the theory that something was living inside his computer because much of the music he programmed came out sounding different than it was composed. Because of his technical limitations, he enlisted the help of James Wickstead Associates, a highly respected engineering firm in New Jersey, to begin his search for the life form.

Word of Gold and Wickstead's work reached us through Malcom Kaufman, an industry observer and producer, in July 1985, and we suggested that our team, Gold and Wickstead join forces in furthering the research. It was in the Spring of 1985 that the breakthrough came and the first little computer person was observed. The discovery confirmed years of speculation that little beings inhabit computers and occasionally cause unexplained hardware and software performance problems.

THE DISCOVERY

Months of exhaustive research finally defined the method by which the beings could be lured out of the computer, allowing observation of them. It was determined that what the beings wanted most was a comfortable environment to live in, so we designed a 2½ story house that resides in software on a diskette and can be loaded into the computer. The house has a large living room, an efficient kitchen, a comfortable bedroom, a bathroom, a study and a recreation room. The house was designed initially for the Commodore 64 computer, on which all preliminary experiments were conducted and on which the first subject was observed. We have now found that the house we have designed can successfully lure out a subject in each computer on which we have tried it.

It was in early July that the "house on a disk" was first loaded into an Apple II computer and a subject moved in. The lifestyles, habits and abilities of the Apple computer people seem very similar to those of the Commodore 64 computer dwellers. The significance of the Apple find lies in the reinforcement of our hypothesis that the little computer people live inside all computers, whether they are in living rooms, offices, college dorms, classrooms or still on the shelves in stores.

OBSERVATIONS

We are currently studying the culture of approximately twelve different subjects. Each looks and behaves somewhat differently, although basic traits and task orientation seem similar. For example, all subjects studied to date are able to play the piano, and musical styles differ. The following lists common traits exhibited:

1. As with homo sapiens, there is a basic need to eat, drink and sleep.
2. Full use is made of the many amenities provided in the house. They talk on the telephone (although their speech is, as yet, incomprehensible), read the newspapers and books we've provided, play music on their stereos, watch television and work at their computers.
3. They appear to be health-conscious and routinely brush their teeth, shower and exercise.
4. They take good care of their pets and make sure they are fed regularly.
5. They have demonstrated a desire to communicate by tapping on the inside of the monitor screen. Another method of communication is through the typewriter we have provided. They can read and write English.
6. The little computer people show a remarkable aptitude for playing games. We have successfully played some card games with them.
7. They can be moody: at one moment happy and at another moment a bit sad. We can, however, reassure them by providing a gentle pat on the head. We've also found that they are very pleased when a gift or food is left at the front door.

This last point opens discussion of the various means of interaction we, as researchers, have had with the little people. We have been able to communicate by typing messages on the keyboards of our research computers and are able to ring the telephone in the house as well as set the alarm clock for a desired time. We also, of course, take care to provide food and water on a regular basis. We have also recently developed the capability of providing food for the subjects' dogs. These capabilities, combined with our ability to play games or give a reassuring pat on the head, have allowed for an extraordinary rapport to develop between researchers and subjects.

They appear to have learned a great deal about our language, art, music, games and habits by observing our use of computers over the years. We believe they learned English by encountering our word processing programs, music through our many computer music programs and games by watching us play many computer games over the years. Apparently, they learn more about mankind every day, as our use of computers increases. Obviously, we have years of study in front of us.

We will continue our research into the lifestyles and customs of the little computer people with emphasis on several immediate goals. First and foremost, we will concentrate on the completion of a commercial version of the "house on a disk" for the Commodore 64 and Apple II computers. We anticipate that a prototype will be turned over to production within the next three weeks so that finished product can be produced this Fall. Next, we will begin to apply our research techniques to other popular computers to further strengthen our hypothesis that the little computer people live inside all computers. Finally, we will initiate studies on foreign computers to determine what differences may exist in language, cultural styles and habits.

In conclusion, the customs and habits of the little computer people take on a real meaning when viewed with the insight provided by Malinowski when he wrote:

> Looking from far above, from our high places of safety in the developed civilization, it is easy to see all the crudity and irrelevance of magic. But without its power and guidance early man could not have mastered his practical difficulties as he has done, nor could man have advanced to the higher stages of civilization.

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From time to time, we receive pieces that don't really fit our established editorial formats. Cartoons. Esoteric hints for programmers in languages yet uninvented. Humor articles. In vain we plead, "No, no, we don't do that stuff." People keep sending it anyway, and somewhat to our consternation, occasionally something comes along that overcomes our editorial resistance.

So, to make a long story short, we decided to create a new page for all that material that doesn't fit anyplace else, and to christen it in honor of that fine public domain software which causes hordes of insects to march across the screen of whatever legitimate application you happen to be using. We think this strikes the proper note.

If you, gentle reader, have some particularly intriguing bit of computer-related silliness, off-the-wall information or other bizarre communique to the world at large, send it to us: System Bugs, MicroTimes, 5951 Canning St., Oakland, CA 94609.

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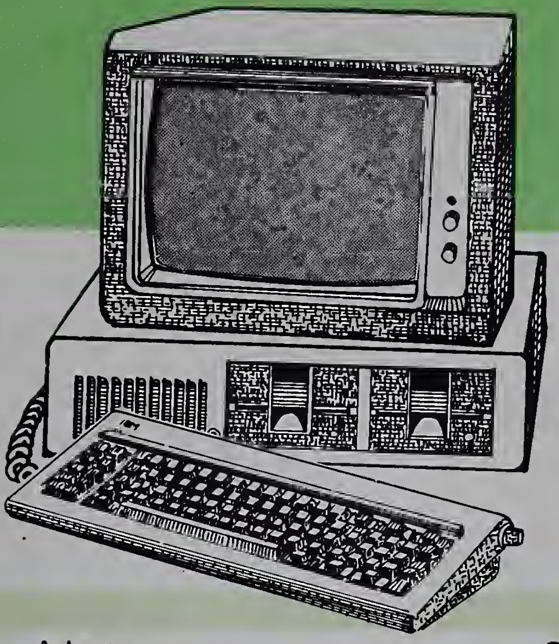

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